

**BEFORE THE HARYANA ELECTRICITY REGULATORY COMMISSION  
BAYS 33-36, SECTOR - 4, PANCHKULA - 134 112 HARYANA**

**IN THE MATTER OF**

HERC (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate Regulation, 2010 (4<sup>th</sup> Amendment, 2015) – Suo Motu.

**AND IN THE MATTER OF**

**Suo Motu Petition.**

Date of Hearing : 23.02.2015 & 5.06.2015

Date of Order : 04.08.2015

**QUORUM:**                      **Shri Jagjeet Singh, Chairman**  
                                         **Shri M.S.Puri, Member**

Present (in the hearing held on 23.02.2015)

- i) Shri R. K. Jain, Counsel for M/s Starwire (India) Limited.
- ii) Shri B.S. Yadav, Kamsolar & Member Executive Committee (NSCIF).
- iii) Ms. Promila Sheoren, HPGCL.
- iv) Shri P.K. Nautiyal, STM, HAREDA.
- v) Shri Varun Todi, Director, Starwire (India) Limited.
- vi) Shri K.S. Saini, XEN/HPPC.

Present (in the hearing held on 5.06.2015)

- i) Shri Samir Malik, Advocate for Starwire (India) Limited.
- ii) Shri Varun Todi, Director, Starwire (India) Limited.
- iii) Shri J.S. Kohli, HAREDA.
- iv) Smt. Seema Sidana, AEE, HPPC.
- vi) Shri K.S. Saini, XEN/HPPC

**ORDER**

**1. Background of the Case**

The Commission, as provided in the HERC (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2010 hereinafter referred to

as 'RE Regulations, 2010' or the 'Principal Regulations', suo-motu, initiated the process of revising the norms provided therein.

Regulation 4 of the Principal Regulations i.e. Haryana Electricity Regulatory Commission (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligations and Renewable Energy Certificate) Regulations, 2010, provides that revision of the Regulations is to be undertaken six months prior to the end of the first Control Period. Further, the first Control Period or Review Period as per sub-regulation (9) of Regulation 2 of the Principal Regulations was of three years i.e. from the FY 2010-11 to the FY 2012-13 and the same has expired on 31.03.2013.

**In view of the above the Commission, Sou Motu, initiated the present proceedings for revision of norms for determination of tariff for the next control period.**

2. It was brought to the notice of the Commission that the base year considered in the Principal Regulations was an exceptional year in terms of inflation and other parameters leading to asymmetry in the projection of parameters/norms to be considered for determination of tariff wherever the same were linked to inflation indices. Further, the Principal Regulations, including the tariff norms, notified were valid for a period of 3 years i.e. FY 2010-11, FY 2011-12 and FY 2012-13.

3. The Commission observes that the Regulation 4 (Chapter 2) of the Principal Regulations provides as under:-

*"The first Control Period or Review Period under these Regulations shall be of three years, of which the first year shall be the period from the date of notification of these regulations to 31<sup>st</sup> march, 2011.*

*Provided also that the revision in Regulations for next Control Period shall be undertaken at least six months prior to the end of the first Control Period and in case Regulations for the next Control Period are not notified until commencement of next Control Period, the tariff norms as per these Regulations shall continue to remain applicable until notification of the revised Regulations subject to adjustments as per revised Regulations".*

4. The Commission, while passing RE Generic Tariff Order dated 13.08.2014, for the RE Projects commissioned/ to be commissioned in the FY 2014-15 and the FY 2015-16 had observed as under:-

- i) *Further, exhaustive study has been got conducted by the CERC specifically for the biomass based power projects with special reference to cost of fuel, GCV of fuel and SHR and the fact that these parameters have not been revised by this Commission as per second proviso to regulation 4 of HERC RE Regulations, 2010. Thus the Commission, to the extent feasible, has given due weightage to the CERC studies as well as biomass fuel cost data submitted by HAREDA while determining generic tariff for the RE power projects to be commissioned in FY 2014-15.*
- ii) *The Commission has noted the contention of Tata Power Co. Ltd. regarding promoting development of tail end biomass projects based on gasification technology and the same shall be addressed / included while reviewing the RE Regulations, 2010 for the second control period.*
- iii) *A distinction has to be made for the RE power plants to be commissioned in Haryana in FY 2014-15 and FY 2015-16 for which PPA has been signed and others which are still in project stage and have not achieved financial closure. Thus the Commission, in the case of RE Power Plants to be commissioned in FY 2014-15 and FY 2015-16 where DPR has been approved by HAREDA and PPA signed and where fuel is involved, has determined fixed cost and fuel cost for the entire life of the project. Fuel Cost from second year onwards is subject to true – up in case the IPP claims that the cost of fuel has exceeded 5% escalation built in the tariff. In such cases the Commission, after detailed study including data on fuel cost compiled by the State Nodal Agency, shall consider additional fuel cost, if any, while passing the Generic Tariff Order(s) in the subsequent years. However, for the eligible RE power plants for which no PPA has been signed as on date of this order the fuel price as determined for the relevant year(s) tariff including escalation of 5% per annum, shall not be re – visited. The Commission expects that the new IPPs, based on their assessment of fuel risk for the entire life of the project, should proceed with the project only.*

- iv) *In addition to the project cost, the interveners submitted that annual derating of solar panel of 1% may also be allowed. The Commission observes that in its previous RE Tariff order it was observed that with the maturing of technology the solar module manufacturers are not only guaranteeing lifelong efficiency of the solar panels but also undertaking replacement of the same during the useful life of the modules supplied by them. The RE Regulations, 2010 also does not provide for any derating, hence the same, for the purpose of present order, has not been considered. The Commission shall examine the issue of de-rating including the methodology to account for the same while reviewing the HERC RE Regulations, 2010.*
- v) *Capacity Utilisation Factor (CUF): On the issue of Capacity Utilisation Factor for Solar PV Power Plants, the intervener submitted that same should be reduced from the existing 19%. The Commission observes that except for a few regions in Haryana i.e. Panchkula, Fatehabad, Rohtak and Kurushetra the solar insolation level is higher than 5 hrs / day, hence a CUF of 19% for the State as a whole is reasonable. Thus, in line with the HERC RE Regulations, 2010, CUF of 19% is retained for the purpose of tariff determination in the present case. However, the Commission shall re-visit the issue while reviewing RE Regulations, 2010.*
- vi) *On the issue of O&M expenses (for solar projects) interveners had suggested that the same may be increased in line with the CERC amended Regulations on generic tariff for RE Projects. The O&M Expenses as per HERC RE Regulations, 2010, is Rs. 9 Lakhs/MW for the 1<sup>st</sup> year of operation and the same is to be escalated at the rate of 5.72% per annum. Hence for FY 2014-15 and FY 2015-16 the O&M expenses has been considered with an annual escalation of 5.72% over the tariff period.*
- vii) *In the case of solar thermal projects O&M expenses as per HERC RE Regulations, 2010, is Rs. 13 lakh / MW for first year of operation to be escalated @ of 5.72% per annum, hence the Commission has considered the same in line with the ibid RE Regulations.*

viii) **Auxiliary Energy Consumption**

*The Commission, for the Solar PV Power plants, has considered the submissions of the intervener that this Commission may also allow auxiliary energy consumption, and is of the view that for Solar PV Power plants HERC RE Regulations, 2010, have no provision for auxiliary energy consumption. Hence the Commission, in line with the HERC RE Regulations, 2010 and its previous RE tariff orders, has not considered auxiliary energy consumption for the Solar PV power plants. However, the Commission shall revisit this issue while reviewing RE Regulations, 2010*

ix) *In view of the exhaustive study done by the CERC including analysis of the comments filed by different stakeholder, this Commission consider it appropriate to adopt GCV of biomass fuel as 3100 kcal / Kg. for the purpose of tariff determination in the present case instead of repeating the entire exhaustive exercise already conducted by the Central Commission.*

x) *In view of the above mentioned exhaustive study the Commission has considered SHR of 4200 Kcal / kWh for station using travelling grate boiler as the biomass based power plants commissioned in Haryana (few others at project stage) are using travelling grate boilers only despite being less efficient vis-a-vis AFBC boilers. However, in case biomass power plants are set up in Haryana with AFBC boilers the normative SHR considered in the present order and also the tariff shall be accordingly adjusted.*

xi) **Wind Power Projects**

*The Commission has noted the contention of the intervener regarding higher capital cost for wind energy power projects and observes that given the low wind velocity in Haryana there could be a need for additional capital cost on account of larger turbine rotor diameter and hub height to make wind power projects in Haryana. However, for the purpose of tariff determination the Commission has considered the benchmark capital cost indexed as per the HERC RE Regulations, 2010. The Commission shall review the capital cost and other parameters while reviewing the HERC RE Regulations, 2010 applicable for the second control period.*

xii) **Interest on Working Capital:** - The interest on working capital has been computed as per HERC Regulations, 2010, reproduced below:-

*“(1) The Working Capital requirement in respect of Wind energy projects, Solar PV and Solar thermal power projects shall be computed in accordance with the following :*

- a) Operation & Maintenance expenses for one month;*
- b) Receivables equivalent to 2 (Two) months of energy charges for sale of electricity calculated on the normative CUF;*
- c) Maintenance spare @ 15% of operation and maintenance expenses.*

*(2) The Working Capital requirement in respect of biomass power projects and non-fossil fuel based co-generation projects shall be computed in the following manner:*

- a) Fuel costs for four months at normative PLF;*
- b) Operation & Maintenance expense for one month;*
- c) Receivables equivalent to 2 (two) months of fixed and variable charges for sale of electricity calculated on the target PLF;*
- d) Maintenance spare @ 15% of operation and maintenance expenses.*

*(3) Interest on Working Capital shall be at interest rate equivalent to average State Bank of India short term PLR / Base Rate during the previous year”.*

xiii) *Any carbon credit earned by the project developer shall be shared in the ratio of 25:75 i.e. 25% to the distribution licensee and 75% shall be retained by the project developer. The benefits of carbon credit passed on to the distribution licensee shall be utilized to reduce their power purchase cost.*

xiv) *In compliance of the judgment of Hon’ble APTEL dated 1/03/2011 in Appeal No. 16 & 117 of 2010 setting aside prohibition of sale of power to third party, the Commission orders that RE Power Project developers, who have not already signed PPA with HPPC/Discoms, may sell power to a third party.*

xv) **O&M Expenses & escalation thereto**

*The O&M expenses and annual escalation of 5.72% has been considered in line with the HERC RE Regulations, 2010 for the purpose of tariff determination in the present case.*

xvi) **Wheeling Charges**

*The wheeling charges shall be as per HERC RE Regulations, 2010 as amended from time to time. The Commission notes that the Hon'ble APTEL, in an appeal filed by Puri Oil Mills, has passed order setting aside the wheeling charges (which was also upheld by the Hon'ble Supreme Court). However, Hon'ble APTEL's in a number of judgements has held that Regulations notified by Electricity Regulatory Commissions are not a matter of appeal and the same is a subject matter of judicial review in a court of competent jurisdiction. Nonetheless, the Commission shall re-visit the issue of wheeling charges in the case of RE Projects while reviewing the HERC RE Regulations, 2010.*

*"The fuel cost (biomass mix) decided by the Commission shall be subject to a cap of twice (2 times) the fuel cost (Rs / kWh) approved by the Commission for thermal power generation of HPGCL in Haryana. Beyond which the HPPC / Discoms shall be under no obligation to purchase power from the Company".*

5. Thus, as per The Electricity Act, 2003 and the policies framed by the Central Government thereto, the Commission is under statutory obligation to encourage and promote development of renewable energy in the State. It is therefore imperative that the parameters/norms applicable for tariff determination ought to be revisited so that the RE Projects set-up/to be set - up in the State remain commercially viable and maximum potential of renewable energy generation of the State can be harnessed, while at the same time, safeguarding the consumer's interest.

Additionally, while determining tariff for the RE Projects set-up / to be set-up in the FY 2014-15 and the FY 2015-16, the Commission had observed that certain parameters / issues raised by the Intervener / objectors shall be considered while revising the RE Regulations, 2010, applicable for the next control period.

6. While undertaking the task of revising the norms, the Commission has also perused the CERC Regulations 1st amendment dated 18.03.2014 regarding norms like Capital Cost, O&M Cost for biomass based RE Projects.

7. Accordingly, the Commission framed the draft 4<sup>th</sup> Amendment to the Principal Regulations and invited comments / objections from the public / stakeholders. The draft 4<sup>th</sup> amendment Regulations was also hosted on the website of the Commission i.e. herc.gov.in. The public notice inviting comments / suggestions / objections from the stakeholders/interested person were inserted in the following Newspapers:-

|                              |            |                                                                           |                                                                                                                        |
|------------------------------|------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Hindustan Times<br>(English) | 03.01.2015 | 21.01.2015 was the last date for filing comments/ suggestions/ objections | Date and Time of Public Hearing was to be hosted on the Commission's Website under the heading "Schedule of Hearings". |
| Dainik Bhaskar<br>(Hindi)    | 04.01.2015 |                                                                           |                                                                                                                        |

The date and time of Public Hearing i.e. 23.02.2015 at 10.30 A.M. was hosted on the Commission's website as well as separately intimated to a large number of stakeholders including the State Government, Haryana Renewable Energy Development Agency (HAREDA), and the distribution and transmission licensees in Haryana i.e. UHBVNL, DHBVNL, HVPNL as well as HPGCL and HPPC.

8. In response the Public Notice issued by the Commission for inviting comments/ suggestions/objections, the following parties filed their comments/suggestions/ objections:-

- i) Haryana Power Generation Corporation (HPGCL) through its Controller Finance Shri B.B.Gupta.
- ii) Star Wire (India) Vidyut Pvt. Ltd. through its Company Secretary Ms. Swati Bhargav.
- iii) Gemco Energy Limited through its Authorised Signatory.
- iv) Sri Jyoti Renewable Energy Pvt. Ltd. through its Director, Shri Srinivas Sanapala.
- v) Director, Renewable Energy Department & HAREDA, Panchkula.
- vi) Chief Engineer, Haryana Power Purchase Centre (a joint forum of UHBVNL & DHBVNL).

9. Comments/Suggestions/Objections filed by the above mentioned interveners are reproduced below:



## **A. HPGCL**

### **O&M Cost**

That as per Chapter-3, Clause 17 of the HERC Draft Renewable Tariff Regulation 2014, O&M Cost of Rs 9.00 Lakhs / MW in FY 2011 with 5.72% Escalation has been proposed in determining the levelised tariff for 25 years. Accordingly the level of O&M expenses work out to Rs. 10.05 Lakhs/MW for F.Y. 2012-13. As per CERC regulation the O&M Cost for the FY 2013-14 is Rs. 11 Lakhs/MW for Solar PV Project.

That in order to promote the renewable energy in the State of Haryana, the Commission should sufficiently increase allowed O&M Cost to bring it at-least at par with CERC approved O&M Cost which in itself is very stringent. O&M Cost Escalation should be linked to indices of Inflation (WPI and CPI) as in case of Biomass Gas Project given in same Draft Regulation. Some true up mechanism may also be provided keeping in view the longer span of levelised tariff.

### **De-Rating**

That there is no provision for considering de-rating of solar panel in the capacity utilization factor (CUF) with the passage of time. CUF of 19% has been considered for 25 years in determining the levelised tariff of solar power.

During the discussions with the experts of the field it has been gathered that the efficiency of the Solar PV modules remains at the specified levels during the initial 4 to 5 years and subsequently the same starts deteriorating by 10% by the end of 10 years and thereafter up to 20% by the end of 25 years despite the guarantee of the solar PV manufacturer.

CERC in its tariff order for 2014-15 has also allowed for 0.5% De-rating in capacity of Solar PV plant from 4th year onwards and has monetized the cost of loss in generation. Most of Solar PV cells manufacturers also give guarantee of the installed capacity till first 4-5 years only. Thereafter there is a subtle decrease in generation capacity of Solar PV Plant. Hence, this Commission should also make provision for De-Rating of the Solar PV Plant appropriately in the range of 0.5% to 1%. This could be either by taking into

account less amount of Generation in subsequent years or by monetizing the loss of generation.

### **Auxiliary Consumption & Transmission losses**

That no provision has been kept for the Auxiliary Energy Consumption & Transmission Losses in the draft regulation for solar power. The same may be kept in line to the regulation 34.2 & 34.3 of HERC MYT Regulation, 2012, for micro hydro-electric plants i.e. 0.5% Auxiliary Consumption & 0.5% transmission losses. This would also be in line with auxiliary Consumption for Solar PV Plant as allowed by State Regulatory Commissions of Madhya Pradesh, Rajasthan and Gujarat.

### **Determination of Tariff**

That the levelised generic tariff is determined by the Commission on annual basis. As engaging a consultant, preparation of DPR/specifications/NIT documents and engaging the EPC contractor for setting up the Solar Power project, is a tedious and lengthy process it would be helpful for the solar power developers/facilitators in timely planning its financially sound decisions if the tariff is determined for the projects which are to be commissioned in the next 2/3 years, in single order as determined by the Gujarat Electricity Regulatory Commission.

Gujarat Electricity Regulatory Commission vide Order No. 1 of 2012 had determined the levelised tariff for the projects to be commissioned from 29.01.2012 to 31.03.2013, 01.04.2013 to 31.03.2014 and 01.04.2014 to 31.03.2015 separately for each year in a single order.

### **Canal top solar power PV projects**

That the HERC has specified the norms for Solar PV power project under chapter-8 of the RE regulation but has not differentiated in the different types of Solar PV projects for determining the commercial and technical norms differently. Nothing has been provided for canal top solar power PV Projects. Capital cost and efficiency norms needs to be provided separately for such projects keeping in view that the cost of setting up a canal top project which is higher than a normal solar power project setup on flat ground by about Rs. 1.5 to 2.0 crore/MW. Depreciation effect will also be

more in such project due to moisture effect. Simultaneously the efficiency of canal top project is slightly higher due to cooling of solar modules and enabling them to be operated within the design temperature range. Accordingly, the capital cost and Capacity Utilization Factor (CUF) of a canal top project needs to be kept higher i.e. by about Rs. 1.5 to 2 crore per MW and by 1 to 1.5% respectively.

## B. Star Wire (India) Vidyut Pvt. Ltd

### Capital Cost

That the base year considered by the Commission in the Principal Regulations was an exceptional year in terms of inflation and other parameters which led to asymmetry in the escalation of capital cost on a year to year basis.

The capital costs for Biomass based plants as approved by the Commission vide their various annual generic tariff orders is tabulated in the table that follows. The Commission is requested to consider a fair and just capital cost so that the Biomass Power Plants are commercially sustainable. The actual Capital Cost borne by the company for setting up of 9.9 MW Biomass Power Plant is Rs 656 Lacs /MW.

(All figures in Lacs/MW)

| Commission/ Financial Year                     | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 |
|------------------------------------------------|---------|---------|---------|---------|---------|
| Haryana Electricity Regulatory Commission      | 450     | 450     | 445     | 467.87  | 491.31  |
| Central Electricity Regulatory Commission      |         |         |         | 540     | 544.187 |
| Bihar State Electricity Commission             |         |         |         | 540     | 544.187 |
| Rajasthan Electricity Regulatory Commission    |         |         |         | 522     | 526     |
| Punjab State Electricity Regulatory Commission |         |         |         | 540     | 544.187 |

| Financial Year | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
|----------------|---------|---------|---------|---------|
| WPI Value      | 143.32  | 156.13  | 167.62  | 177.64  |

From the above table it can be seen that the capital cost considered by this Commission in the years 2010-11 & 2011-12 has remained the same. Thereafter, the capital cost in the year 2012-13 was further reduced from the initial year of 2010-11 even though the WPI of all commodities has been

rising on a year to year basis. In view of this anomaly the Commission is requested to kindly take note that even CERC has amended capital cost for Biomass Power Plants vide their order dated 18.03.2014 whereby they have approved a Capital Cost of Rs 540 Lacs/MW (with water cooled condenser) for FY 2013-14. The asymmetry, in the base year, has led to the indexation formula giving us unrealistic capital costs on a year on year basis even though the economy has experienced inflation and increase in WPI. We therefore request the Commission to consider an appropriate capital cost taking into account the capital cost incurred by all project developers in the State and the capital cost approved by CERC. We would like to further add that states like Bihar, Rajasthan & Punjab are amongst the few states who have adopted Capital Cost as per CERC amended order.

### **Fuel Handling & Storage Losses**

That the Commission may take note of the fact that Biomass is a fuel which has seasonal availability and is not available throughout the year. Hence, the biomass based power plants have to procure and store the same in huge quantities during the availability season. Also the density of Biomass fuel is very low as compared to coal/other fuels. Since fuel has to be stored in such large quantities the same has to be handled and stacked in a proper manner so as to preserve the same through the monsoon months. Also since biomass fuel is self-combustible, proper dressing has to be maintained while stacking of the same. This results in fuel being stored over a large area. The same has to be lifted and shifted from stacking point to feeding point using tractor trolleys and other fuel handling equipment for feeding into the boiler. The average lead distance works out to approximately 2-3 K.M. Thus, the biomass project developers have to bear huge costs towards handling and storage of Biomass fuel due to the above reasons. We request the Commission to kindly consider 4% of Fuel Cost as cost allowed for handling & storage to be allowed over and above the Fuel Cost as part of the variable cost in the tariff. We would also like to bring to the notice of the Commission that Rajasthan State Electricity Regulatory Commission has allowed 2% for handling and storage charges for biomass fuel vide their order dated 23.07.2014. The details of fuel handling and storage expenses incurred by us

during FY 2013-14 and FY 2014-15 (upto Dec 2014) is presented in the table that follows:-

| <b>Fuel Handling&amp; Storage Expenses incurred in FY 2013-14 and FY 2014-15 (upto Dec 2014)</b> |                       |                |
|--------------------------------------------------------------------------------------------------|-----------------------|----------------|
| <b>Particulars</b>                                                                               | <b>Financial Year</b> |                |
|                                                                                                  | <b>2013-14</b>        | <b>2014-15</b> |
| Fuel Consumption in MT                                                                           | 86,719                | 96,920         |
| Fuel Handling & Storage                                                                          | 12,447,670            | 13,546,630     |
| Fuel Handling cost per MT                                                                        | <b>143.54</b>         | <b>139.77</b>  |
| Fuel Cost/MT approved by HERC                                                                    | 2,909                 | 3,055          |
| Fuel Handling & Storage as % Fuel Cost/MT                                                        | <b>3.35</b>           | <b>3.15</b>    |

#### **Loss of Plant Efficiency& Plant Load Factor**

That all plants and machinery experience loss in efficiency and performance with the passage of time. The older the equipment, the lower is the efficiency. Since the life of Biomass Power Plants, as considered by the Commission, is 20 years, we would request the Commission to kindly factor in loss of efficiency of the plant. We request the Commission to kindly allow an increase of 2% in the Plant Heat Rate on a year on year basis as it directly reflects efficiency of a plant.

That the Biomass Power Plants have to take regular monthly shutdowns for maintenance and cleaning of boilers due to the nature and chemical composition of Biomass fuels. These shut downs require a minimum of 3 days every month. Also every plant has to take an annual shut down of 12-15 days in a year during which all major equipments are checked and maintained. Over and above that, we have to face some shut downs due to transmission line maintenance and maintenance of substation by Nigam. During any shut down, the generating plant is not operational and the electricity requirement of the plant is fulfilled by importing power from the Discom. We would request the Commission to kindly consider a Plant Load Factor of 77 % on an annual basis which would be a true and just Plant Load Factor keeping in mind all the factors mentioned above. Rajasthan State vide their order dated 23.07.2014 has considered a PLF of 60% in the first 6

months for stabilization and then a PLF of 70% for balance 6 months of the first year. The PLF considered from 2nd year onwards by them for determining tariff is 75%. The three operational Biomass Plants in the State are very close to the Rajasthan border using similar fuel as the plants operating in Rajasthan State.

### **O&M Cost and Escalation of O&M Cost**

That the O&M Cost, as proposed by the Commission, of Rs 40 Lacs/MW from FY 2013-14 is on the lower side. We are pleased to produce below the details of cost borne by us during the year FY 2013-14& FY 2014-15 (April – December).

We have commissioned our plant on 03.05.2014 and are the only Biomass Power Plant under the HAREDA MOU to operate for a period of 11 months in the year 2013-14. We would request the Commission to kindly consider an amount which is justified and fair.

On the matter of Escalation of O&M cost we would like to bring to the notice that the Wholesale Prices are not available to the common man. A major part of O&M expenses is salary for staff and security who cannot avail whole sale prices in the market. Every biomass power plant provides direct employment to approximately 150 people and indirect employment to approximately 10000 people. Under the above circumstances we request the commission to kindly consider 70% weightage on CPI (Consumer Price Index) and 30% weightage on WPI (Wholesale Price Index) for calculating the escalation of O&M expenses.

| <b>Actual O&amp;M Cost (Rs.)</b>            |                       |                |
|---------------------------------------------|-----------------------|----------------|
| <b>M/s Star wire India Vidyut Pvt. Ltd.</b> | <b>Financial Year</b> |                |
| <b>Expense Head</b>                         | <b>2013-14</b>        | <b>2014-15</b> |
| Plant Operation Expenses                    | 3,17,42,954           | 2,71,14,419    |
| Administration & General Expenses           | 84,59,116             | 94,06,815      |
| Total Expenses                              | 4,02,02,070           | 3,65,21,233    |
| Cost/MW                                     | 40,60,815             | 36,89,013      |
| Average Cost/MW (for 12 months)             | 44,29,980             | 49,18,685      |

That the total O&M expenses for the FY 2013-14 is based on 11 months operation due to plant being commissioned only since 03.05.2013. The total

expenses for FY 2014-2015 considered is for the period April, 2014 to December, 2014. The same has been averaged out to account for full year for calculation of the yearly O&M Cost/MW. The escalation in O&M Cost from FY 2013-14 to FY 2014-15 works out to about 11%.

### **Wheeling Charges**

The Electricity Act 2003 under Section 2 (76) defines wheeling as follows,

***“Wheeling” means the operation whereby the distribution system and associated facilities of a transmission licensee or distribution licensee, as the case may be, are used by another person for the conveyance of electricity on payment of charges to be determined under section 62***

When power is being sold by a generator under a long term PPA to the State Utility, the distribution system is being utilized by the Distribution licensee for taking power from the generating station for supply to its consumers.

As per the Regulations, the transmission line is to be constructed by the Transmission utility up to a distance of 10 kms to export power from the generating station to the substation for distribution. The delivery point is the bus bar of the generator as per the PPA's which have been signed by HPPC for Biomass Power Plants. Hence the wheeling charges should not be applicable.

That the transmission line which is being constructed by the Utility is being claimed by Discom's as part of the ARR tariff by way of depreciation being charged on the transmission line. The same is being passed on to the electricity consumers. Hence, deducting wheeling charges from the generators bill, on account of the delivery of power at the generating bus, results in Utility charging twice.

That the tariff calculated for Renewable Energy Projects is on a cost plus basis. The return on equity is capped for the project developer and hence adding any cost burden upon the project without the same being added in the reimbursement is unjust and unfair. Under the above circumstances, wheeling charges should not be charged and the same should

be refunded by the utility or if wheeling charges is to be deducted by the utility then the same should be added to the tariff as a cost pass through.

That the wheeling charges regulations is in contrary to the judgment of the Hon'ble Appellate Tribunal of Electricity Order dated 09.04.2014 in the matter of M/s Puri Oil Mills Ltd versus Haryana Power Purchase Centre & Others which has further been upheld by the Hon'ble Supreme Court of India by its order dated 08.10.2014 in the matter of Haryana Power Purchase Centre & Anr versus Puri Oil Mills Ltd.

### **C. Gemco Energy Limited**

#### **Wheeling Charges**

That as per the Power Purchase Agreement signed between the Biomass Power Plant Developers and HPPC, the delivery is taken at the bus bar at the Generator end. The transmission line from the generating station to the sub-station to export power is constructed by the Transmission utility. The distribution system is being utilized by the distribution licensee for taking power from the Generating station for supply to its consumers. Hence the wheeling charges should not be levied to the Generator. In any case, the transmission line which is constructed by the utility is being claimed by Discom as part of the ARR tariff by way of depreciation charged on the transmission line & the same is being passed on to the customers.

We therefore request the Commission that wheeling charges should not be charged to us.

#### **Capital Cost**

We would request the Commission to kindly note that CERC has considered capital cost for Biomass Power Plants as Rs 540 lacs/MW for the year 2013-14 & Rs. 544.187 lacs/MW for the year 2014-15 as against Rs 467.87 lacs/MW for the year 2013-14 & Rs. 491.31 lacs/MW for the year 2014-15 considered by the Hon'ble Commission. The actual Capital cost incurred for setting up any Biomass Plant is much higher.

We therefore request the Hon'ble Commission to review the Capital Cost & consider them at least to what CERC has approved.



### **Storage & Fuel Handling Cost**

That Biomass fuel has very low bulk density & is available only during the season. Due to this it has to be purchased during the crop season & stored at a safe place in huge quantity which require huge space. At the time of storage, it has to be properly stacked & covered to preserve it from monsoon & stormy weather. Biomass also has the tendency of self-combustion due to its natural moisture & its net CV gets deteriorated with the passage of time. Besides this, there is also some cost involved in shifting of fuel to the feeding point. All these factors have not been considered anywhere while arriving at the net cost of fuel.

We therefore request the Hon'ble Commission to kindly add minimum 6% of net fuel cost as cost towards storage & handling over and above the Fuel Cost. It may please be noted that even Rajasthan State Electricity Regulatory Commission has allowed this handling and storage charges for biomass fuel in 2014.

### **Efficiency of Plant**

That the life of any Biomass Power Plants is generally considered as 20 years. The performance & efficiency of its Plant & machinery cannot remain same throughout these 20 years. The efficiency gets deteriorated with passage of time & this fact is also not accounted for anywhere while arriving at the tariff.

We therefore request the Hon'ble Commission to kindly consider the loss in efficiency also while determining the revised tariff.

### **Escalation of O&M Cost**

That the Operation & Maintenance Cost escalation may please directly be linked to CPI (Consumer Price Index) & not to WPI (Wholesale Price Index) as the major cost of O&M expenses is Staff salary & Security manpower charges & Salaries increase is much higher than annual increase in Wholesale Price Index.

## D. Sri Jyoti Renewable Energy Pvt. Ltd

### Capital Cost

That the capital cost as suggested by CERC of 540 Lakhs/MW may be considered. This cost was arrived by CERC based on extensive study of the biomass industry across the country. As we all are aware, the cost of land in Haryana is the highest compared to the neighboring states. In the table below the costs adopted by Rajasthan and Punjab Regulatory Commissions (our neighboring states) have been listed for your review and kind consideration.

(All figures in Lacs/MW)

| Commission/ Financial Year                     | 2013-14 | 2014-15 |
|------------------------------------------------|---------|---------|
| Haryana Electricity Regulatory Commission      | 467     | 491     |
| Central Electricity Regulatory Commission      | 540     | 544     |
| Rajasthan Electricity Regulatory Commission    | 522     | 526     |
| Punjab State Electricity Regulatory Commission | 540     | 544     |
| Bihar State Electricity Commission             | 540     | 544     |

Additionally, the following amendment to Regulation 18(2) of the Principal Regulations was proposed.

"(2) Where payments are made other than through letter of credit within a period of one month of presentation of bills by the generating company, a rebate of 1% shall be allowed on a pro rata basis."

### O&M Cost and Escalation of O&M Cost

That the O&M Cost as suggested by CERC and proposed by the Hon'ble Commission of Rs 40 Lacs/MW from FY 2013-14 and escalation as per CERC suggestion of 5.72% per year may be considered by the commission.

### Wheeling Charges

The Electricity Act 2003 under Section 2 (76) defines wheeling as follows :-

*"Wheeling" means the operation whereby the distribution system and associated facilities of a transmission licensee or distribution licensee, as the*

*case may be, are used by another person for the conveyance of electricity on payment of charges to be determined under section 62.*

When power is being sold by a generator under a long term PPA to the state utility, the distribution system is being utilized by the distribution licensee for taking power from the generating station for supply to its consumers.

As per the Regulations, the transmission line is to be constructed by the Transmission utility up to a distance of 10 km to export power from the generating station to the substation for distribution. The delivery point is the bus bar of the generator as per the PPA's which have been signed by FIPPC for Biomass Power Plants. Hence the wheeling charges should not be applicable.

We would also like to bring to the notice of the Commission that the transmission line which is being constructed by the utility is being claimed by Discom's as part of the ARR tariff by way of depreciation being charged on the transmission line. The same is being passed on to the customers and hence deducting wheeling charges from the generators bill on account of the delivery of power at the generating bus results in utility charging twice.

We would also like to bring to the notice of the Commission that the tariff calculated for Renewable Energy Projects is on a cost plus basis. The return on equity is capped for the project developer and hence adding any cost burden upon the project without the same being added in the reimbursement is unjust and unfair. Under the above circumstances, wheeling charges should not be charged and the same should be refunded by the utility or if wheeling charges is to be deducted by the utility then the same should be added to the tariff as a cost pass through.

### **Fuel Handling & Storage Losses**

That Biomass is a fuel which has seasonal availability and is not available throughout the year. Hence all plants have to procure and store the same in huge quantities during the availability season. Also the density of Biomass fuel is very low as when compared to coal. Since fuel has to be stored in such large quantities the same has to be handled and stacked in a

proper manner so as to preserve the same through the monsoon months. Also since biomass fuel is self-combustible, proper dressing has to be maintained while stacking of the same. This results in fuel being stored over a large area. The same has to be lifted and shifted through trolleys at the time of usage. The average lead distance works out to approximately 2 kms. All plants have to bear huge costs towards handling and storage of Biomass fuel due to the above reasons. We request the Commission to kindly consider 3% of Net Fuel Cost as cost allowed for handling & storage to be allowed over and above the Fuel Cost as part of the variable cost in the tariff. We would also like to bring to the notice of the Commission that CERC has recommended 2% to be considered as fuel storage and handling losses based on extensive study of Bid-I-lass plants. Rajasthan State Electricity Regulatory Commission has allowed 2% for handling and storage charges for biomass fuel vide their order dated 23.07.2014.

#### **Loss of Plant Efficiency & Plant Load Factor**

That all plants and machinery experience loss in efficiency and performance over a period of time. The older the equipment, the lower is the efficiency. Since the life of Biomass Power Plants as considered by the Commission is 20 years, we would request the Commission to kindly factor in loss of efficiency of the plant. Please note that similar degradation is allowed in computation of tariff of all thermal stations which have coal as a single fuel. We request the Commission to kindly allow an increase of 2% in the Plant Heat Rate on a year on year basis as it directly reflects efficiency of a plant.

We would request the Commission to kindly consider a Plant Load Factor of 77% on an annual basis which would be a true and just Plant Load Factor keeping in mind the extensive maintenance of boiler needed for varying biomass fuels. Rajasthan State vide their order dated has considered a PLF of 60% in the first 6 months for stabilization and then a PLF of 70% for balance 6 months of the first year. The PLF considered from 2<sup>nd</sup> year onwards is 75%.

## **E. Renewable Energy Department & HAREDA**

### **Capital Cost of Biomass Projects**

That the Capital Cost for biomass projects was considered by the Commission in its tariff Orders were Rs. 4.68 Crore / MW and Rs. 5.40 Crore/MW. The CERC vide its notification dated 18.03.2014 has fixed the normative Capital Cost of Rs. 5.40 Crore/MW for the biomass projects with water cooled condenser. Hence, the Commission may also consider revising the Capital Cost of biomass projects.

### **Biomass Fuel Price and Handling Charges**

That the Fuel Price considered by the Commission does not take into account transportation and handling charges. Every year HAREDA provides biomass fuel cost report to the Commission based on information received from the districts of Haryana. For the year 2014-15, the average biomass fuel cost for the State was Rs. 3436/- MT exclusive of transportation and handling charges. Fuel linkage is the most crucial factor for the success of biomass projects unlike coal based projects where supply of coal is assured through coal linkage. Moreover, biomass is available only for a limited period of harvesting season and the biomass has to be stored and transported from far off places. The handling of biomass is even more difficult as it is voluminous and has low density. Biomass is also difficult to store in adverse weather conditions. Hon'ble Rajasthan Electricity Regulatory Commission has also taken cognizance of this issue and has allowed 2% handling charges in their Order dated 23.07.2014. Hon'ble Punjab Electricity Regulatory Commission in its Order dated 25.06.2013 has adopted the Fuel Price Indexation Mechanism to determine the tariff for biomass projects. Hence, this Commission may also consider the request of the IPPs for allowing fuel handling charges.

### **Wheeling Charges**

That the Electricity Act, 2003 in Section 2(76) defines wheeling as the operation whereby the distribution system and associated facilities of a transmission licensee or distribution licensee, as the case may be, are used by another person for the conveyance of electricity on payment of charges to be determined under Section 62. In the case of various IPPs, the power is being

purchased by the distribution licensee for supply to its consumers. So there is no justification in levying the wheeling charges. Further, in the case of Solar Power projects also, wheeling charges are not levied. Even the Hon'ble APTEL in its judgement dated 9.04.2014 in the matter of Puri Oil Mills for the small hydel projects set up in Haryana has held that the wheeling Charges are not leviable in cases where the energy is utilised by the distribution licensee and had Ordered for refund of the same with interest. Hence, this Commission may also consider the request of the IPPs for waiving of wheeling Charges for the projects selling their power to the distribution licensees.

### **Capital Cost & Fuel Cost for bagasse based Co-generation Projects**

That the Capital Cost for a 25 MW bagasse based cogeneration project under execution in Haryana is Rs.116.09 Crore (Rs. 4.64/MW) and the fuel cost has been considered at Rs.2000/- per tonne as per the DPR submitted in 2013.

### **Capital Cost and Fuel Cost for Biogas based Power Projects (Gasification/any other technology)**

Regarding gasification, it is informed that one MW power project has been commissioned in Mulana, Ambala for captive use by M/s Chanderpur Renewable Power Limited, Jagadhri. The project cost is Rs. 6.06 Crore. It uses wood chips, tree branch cuttings etc. as fuel.

### **Solar PV Power Projects**

#### **O&M Cost**

That in Order to promote the renewable energy in Haryana, O&M cost may be brought at least at par with the CERC approved O&M cost which itself is very stringent.

#### **De-rating**

That as per MNRE policy, the modules have been guaranteed for 90% of their rated capacity output at the end of 12<sup>th</sup> year and 80% at the end of 25<sup>th</sup> year. So, there may be degradation of 20% in 25 years. Hence, this Commission may consider the de-rating of solar panel accordingly i.e. in the range of 0.5% to 1%.

### **Auxiliary Energy Consumption**

That no provision has been kept by the Commission for the auxiliary energy consumption in the proposed amendment for Solar Power Projects. The same may be kept @ 0.5% as there is Auxiliary Energy Consumption in the Solar Power Plants.

### **Canal Top Solar Power PV Projects**

For the canal top Solar Power PV Projects, the capital cost is slightly higher than that of other Solar PV power projects. Further, the efficiency of Canal Top projects is slightly higher due to cooling of solar modules thereby enabling them to be operated within the design temperature range. Accordingly, the Capital Cost and Capacity Utilisation Factor (CUF) of a Canal Top projects needs to be kept higher i.e. by about Rs.1.5 to Rs.2.0 Crore/MW and CUF may be kept 1% higher.

Capital Cost for the Solar PV power projects may be considered as suggested by the CERC.

### **F. Haryana Power Purchase Centre ( A joint Forum of UHBVNL and DHBVNL)**

The Chief Engineer, Haryana Power Purchase Centre vide Memo No. Ch-138/HPPC/SE/C&R-I/PSA/T-26D dated 12.03.2015 submitted the following comments for the consideration of the Commission.

#### **Wheeling Charges**

That the Commission has suitably amended the applicability of Wheeling Charges vide 3<sup>rd</sup> Amendment of the RE Regulations. Hence, no further amendment in this clause is required. Moreover, the applicability of depreciation charges as expenditure item in the Gross Annual Revenue Requirements of the Discoms is not a justification for non applicability of Wheeling Charges, as the Non - Tariff Income that includes revenue from Wheeling Charges reduce the Gross Annual Revenue Requirements; and thereon the tariff of the consumer is decided by the Commission on the basis of the net ARR.

### **CUF of Solar PV Power Plants**

That CUF of Solar PV Power Plants should not be reduced from the existing 19%. With the improvement in technology, solar modules with better capacity and better efficiency are expected to generate more with higher CUF of 19%. Moreover, the CUF of 19% has been adopted as 19% in most of the States considering the all India average established and adopted by the CERC. The estimated capacity factor varies from 16% to 20% in various parts of the country. At most locations in Rajasthan and Gujarat it is around 20%. In overall most of the places it is around 19%.

### **Increase in Capital Cost & Fuel Cost of Biomass Projects**

That the Capital Cost of installation of biomass power plant is between Rs. 4.5 Crore to Rs. 5.0 Crore per MW, depending on boiler pressure and capacity. The PLF is 70 to 75% which gives distinct advantage to such projects. Also, the cost of generation depends on the cost of biomass, the plant load factor and the efficiency of conversion. Although it would be difficult to comment precisely on the quantum of Capital Cost & fuel cost of projects. However, any increase in tariff of power from the biomass power projects would further lower down its position in the cost wise merit order in respect of non – solar renewable energy power plants. The Capital Cost for biomass power projects with water cooled condenser and air cooled condenser in Gujarat has been proposed at Rs.4.68 Crore/MW and Rs. 4.98 Crore/MW respectively, which are nearly the same as considered by the HERC. Further, in Maharashtra, the Capital Cost for biomass based power projects with water cooled condenser have been approved at Rs. 4.803 Crore/MW vide MERC Order dated 7.07.2014. The biomass fuel price applicable for the FY 2014-15 for Maharashtra is Rs. 3198.61/tonne, Rs. 3271.01/tonne for Punjab and Rs. 3127.40/tonne for Haryana.

### **Capping of the Cost of Biomass Fuel Price**

That the Commission had rightly introduced the following clause in the PPAs of biomass projects and the same should be retained.

*“The fuel cost (biomass mix) decided by the Commission shall be subject to a cap of twice (2 times) the fuel cost (Rs./kWh) approved by the Commission for thermal power generation of HPGCL in Haryana. Beyond which the*



*HPPC/Discoms shall be under no obligation to purchase power from the company”.*

The State Commission could take assistance from the State Renewable Energy Agency and Agriculture Department to ascertain the availability of types of biomass fuels and the prices prevailing in the State and assess the proportion of different biomass fuels. The State Commission is requested to cautiously call for and peruse the evidences of actual prices/quotations prevailing in the market. This is because the procurement of biomass fuel is highly un-organised and the prices are influenced by various local factors and they vary in a wide range. There is no established mechanism to estimate the reasonable price of biomass. Thus, any proposal of the stakeholders for higher price of fuels which are not supported by valid reasons should not be accepted by the Commission.

#### **Fuel Handling and Storage Losses**

That the allocation of extra cost towards fuel handling and storage over and above the fuel cost would unnecessarily burden the consumers with an enhanced tariff owing to costly power purchase from biomass based generators. No such charges allowed in the States like Maharashtra, Gujarat etc. The Gross Calorific Value of 3611 kCal/Kg has been approved for Maharashtra vide MERC Order dated 7.07.2014 which is even higher than those approved for Haryana.

#### **Loss of Plant Efficiency and PLF**

That the stakeholders should not have a selective approach to pick and choose the norms of CERC wherever beneficial to them. The PLF norm should be fixed by this Commission post stabilisation period subject to prudence check. Given the availability of biomass in the State, the Discoms foresee no reason for the biomass based power plants not achieving the normative PLF as applicable.

### **10. Public Proceedings**

The Commission, in order to finalise the 4<sup>th</sup> Amendment Regulations, considered it appropriate to hear the objectors who had filed their comments / suggestions / objections as well as any other interested parties/persons who may like to present their views in the hearing. Accordingly, the Commission held a hearing on 23.02.2015 which was attended by a large number of stakeholders including the representatives of HPGCL, HPPC and HAREDA. In the said hearing the Commission directed HAREDA and

HPPC to file their comments/objections, within seven days, on the draft 4<sup>th</sup> Amendments as well as on the comments/suggestions filed by M/s HPGCL, Starwire, Genco and Sri joyti. A copy of the comments/suggestions was handed over to HAREDA and HPPC. The comments/objections/suggestions received either from HAREDA and HPPC are summarised at para no. 9(E & F) of the present Order.

In order to get further clarity in the matter specifically in reference to the applicability of CERC norms as per the 1<sup>st</sup> Amendment dated 18.03.2014 to the RE Projects commissioned in the FY 2013-14 as well as extending the second 'Control Period' under the RE Regulations, 2010, up to the FY 2017-18, the Commission scheduled a hearing of the stakeholders on 5.06.2015.

The hearing was held as per the schedule intimated to the parties as well as hosted on the Commission's website under the heading "Schedule of Hearings".

Shri J.S. Kohli, Sr. Scientific Officer, Department of Renewable Energy, Haryana and Haryana Renewable Energy Development Agency (HAREDA), submitted that out of 1000 MW potential for biomass based power generation only about 23.4 MW (three projects) have been commissioned in Haryana up to the FY 2014-15 and there are none in the pipeline. Further, he submitted that Haryana Government has banned burning of the paddy in the field; hence biomass based RE Power Projects should be encouraged to utilise such agro waste. He also brought to the notice of the Commission the comparative high cost of land in Haryana as well as the problems of fuel linkage and storage faced by the biomass based RE Project Developers. Hence, he suggested that the project cost should be kept at a realistic level in order to encourage such projects. Additionally, the representative of HAREDA agreed with the proposal of the Commission to extend the 'Control Period' up to the FY 2017-18.

Smt, Seema Sidana, AEE/HPPC, submitted that in case the tariff fixation norms are changed, the biomass power tariff, which is already high compared to those fixed by other SERC's would go up further. Further, she argued that tariff as per the concluded PPA's with the biomass project developers ought not be increased. Additionally, she argued that the 'Control Period' ought not to be extended and the Commission should take a fresh look at the financial and operating norms of RE Projects and accordingly notify a fresh RE Regulations for the RE Projects to be set up in the FY 2016-17 onwards.

In addition to the above and in compliance to the directions given by the Commission in the hearing held on 5.06.2015 and subsequent reminder issued vide Memo No. 813/HERC/tariff dated 18.06.2015, the Chief Engineer, HPPC, vide Memo No. Sh-9/HPPC/SE/C&R-I/PSA/123A dated 25.06.2015 submitted their reply in continuation to the comments already filed by them vide Memo No. Ch-138/HPPC/SE/C&R-I/PSA/T-26D dated 12.03.2015 (reproduced at Para 9 (F) of the present Order. The additional comments / observations of the HPPC now submitted are briefly summarized as under:-

On the issue of extending the control period proposed by the Commission, HPPC in their written reply dated 25.06.2015 submitted that the time duration of the control period should be restricted to three years and ought not to be extended beyond the same. HPPC has submitted that due to the *“technical advancements and increase in the activity of the input required for execution of the projects based on renewable energy, essential input can be procured at more competitive prices. A steep downfall has been witnessed in the cost of execution of the solar power – based projects. From the initial input cost of about Rs. 18 Crore per megawatt, the cost has fallen to Rs. 7/8 crore per megawatt. The cost is likely to fall still further in the projects that are likely to be commissioned in near future. ....Hence, in case the tariff is determined for a longer duration, the same is likely to not take into consideration the reduction in the cost of execution of the project and unnecessarily give windfall gains to a generator by assuming a cost that is actually not been paid”*.

Further, on the issue of applicability of the revised Regulations, the HPPC submitted that *“as the revision of tariff must strike a balance between the generator and the ultimate consumers, it would thus be desirable that the control period should be restricted to a period of 3 years before a further revision and the revision which is being now undertaken should be made enforceable prospectively w.e.f. the date of notification so that the benefit of said revision in tariff can actually be examined over the full length of the control period for which it is to be notified”*.

Shri Samir Malik, the Ld. Advocate, appearing for the Star Wire (India) Vidyut Pvt. Ltd. along with Shri Varun Todi, Director, Star Wire (India) Vidyut Pvt. Ltd., argued at length.

Their main arguments including written submissions are as under-

1. *“The present objector/intervener; M/s Star Wire (India) Vidyut Pvt. Ltd. (“Company”) is a company incorporated under the provisions of the Companies Act, 1956 having its registered office situated at 8C/6, WEA, Abdul Aziz Road, 3<sup>rd</sup> Floor, Karol Bagh, New Delhi 110 005. The Company has commissioned a Biomass based Renewable Energy Power Plant at village Khurawala on Zerpur - Mohindergarh Road in District-Mohindergarh, Haryana, with an aggregate installed capacity of 9.9 MW (“Biomass Generating Plant”). The said Biomass Generating Plant was commissioned and synchronized with the grid on 03.05.2013.*

***Re: Haryana Electricity Regulatory Commission (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2010.***

2. *In exercise of the powers conferred under Section 181 of the Electricity Act, 2003 (“Act”), this Hon'ble Commission on 03.02.2011 notified Haryana Electricity Regulatory Commission (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2010 (“HERC 2010 RE Regulations”). These HERC 2010 RE Regulations laid down certain norms for determination of tariff inter alia for Biomass based Renewable Energy power plants. HERC 2010 RE Regulations were amended by this Hon'ble Commission thrice on 05.09.2011, 25.11.2011 and 15.07.2011.*

3. *The prescribed first control period/review period (“First Control Period”) under the said HERC 2010 RE Regulations was three years and the same expired on 31.03.2013.*

4. *3<sup>rd</sup> proviso to Regulation 4 of the HERC 2010 RE Regulations made a specific provision mandating that revision in 2010 RE Regulations for the next control period shall be undertaken at least six months prior to the end of the First Control Period. The same proviso also provided that:-*

*“in case Regulations for the next Control Period are not notified until commencement of next Control Period, the tariff norms as per these*

*Regulations shall continue to remain applicable until notification of the revised Regulations **subject to adjustments as per revised Regulations**" (emphasis supplied )*

5. *It emerges from the above that though norms specified in HERC 2010 RE Tariff Regulations would provisionally continue to operate during the intervening period between expiry of the First Control Period and notification of revised regulations ("**Intervening Period**"), appropriate adjustments shall be given in the tariff to bring the same at par with the tariff that would have been determined, if revised regulations would have existed at expiry of the First Control Period.*

6. *Therefore, any tariff determined for the Intervening Period shall be in the nature of a provisional tariff. In terms of 3<sup>rd</sup> proviso to Regulation 4 of the HERC 2010 RE Regulations, this provisional tariff is liable to be revised as per the revised norms that may be prescribed in revised regulations.*

**Re: Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012 and its First Amendment of 2014.**

7. *On 06.02.2012, the Hon'ble Central Electricity Regulatory Commission ("**CERC**") notified CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012 ("**CERC 2012 RE Regulations**"). The control period/review period stipulated in Regulation 5 of CERC RE Regulations is five years commencing from the financial year 2012-2013 ("**CERC Control Period**").*

8. *During the continuance of the said Control Period, the Hon'ble CERC on 18.03.2014 notified its first amendment to CERC 2012 RE Regulations ("**CERC 2014 RE Amendment**"). It is noteworthy that in contradiction to proposed 4<sup>th</sup> amendment to HERC 2010 RE Regulations the CERC 2014 RE Amendment was made during*

continuance of its control period. However, in case of proposed 4<sup>th</sup> amendment to HERC 2010 RE Regulations more than 2 years have elapsed since expiry of control period stipulated under HERC 2010 Re Regulations.

9. The following changes with respect to technology specific parameters for Biomass Power Projects based on Rankine Cycle Technology were made CERC 2014 RE Amendment:-

**(a) Capital Cost**

The normative capital cost was revised from Rs.445 Lakh/MW to:

- (i) 540 lakh/MW for project [other than rice straw and juliflora (plantation) based project] with water cooled condenser;
- (ii) 580 lakh/MW for Project [other than rice straw and Juliflora (plantation) based project] with air cooled condenser;
- (iii) 590 lakh/MW for rice straw and juliflora (plantation) based project with water cooled condenser;
- (iv) 630 lakh/MW for rice straw and juliflora (plantation) based project with air cooled condenser.

**(b) Auxiliary Consumption**

The auxiliary power consumption was revised from auxiliary consumption factor of 10% as mentioned below:-

For the project using water cooled condenser:

- (i) During first year of operation: 11%;
- (1) From 2nd year onwards: 10%.

(ii) For the project using air cooled condenser:

- (1) During first year of operation: 13%;
- (2) From 2nd year onwards: 12%.

**(c) Station Heat Rate**

*The Station Heat Rate was revised from 4000 Kcal/KWh as under:*

*(i) 4200 kcal/kWh for project using travelling grate boilers;*

*(ii) 4125 kcal/kWh for project using AFBC boilers.*

***(d) Operation and Maintenance Expenses***

*(i) Normative O&M expenses for the second year of the control period*

*(i.e. FY 2013-14 was fixed at Rs.40 lakh/MW*

***(e) Use of Fossil Fuel***

*The use of fossil fuels has been completely disallowed. The unlamented regulations permitted use of fossil fuel to the extent of 15% of total fuel consumption on annual basis.*

***(f) Calorific Value***

*The Calorific Value of the biomass fuel used for the purpose of determination of tariff has been revised from 3300 kCal/Kg to 3100 kcal/kg.*

***(g) Fuel Cost***

*The following provision has been inserted in Regulation 44 off the CERC 2012 RE Regulations:*

*“Alternatively, biomass fuel price shall be decided annually by the appropriate Regulatory Commission through an independent survey which could be carried out by constituting a State level committee consisting of representatives of State Nodal Agency, State Government, Distribution Licensees, biomass power producers association and any other organization.”*

***Re: Application for revision of norms prescribed in HERC RE Regulations, 2010***

*10. On or about 15.06.2014, the Company filed an application being Case No.HERC/RA-02/2014 before this Hon'ble Commission seeking revision of norms prescribed in HERC 2010 RE Regulations on the basis of CERC 2014 RE Amendment. A copy of the application being Case No.HERC/RA-02/2014 filed by the Company before this Hon'ble Commission was annexed.*

11. On 24.03.2015, the Company withdrew the said application since issues raised in the application were same as that of the issues that were being proposed to be addressed in proposed 4<sup>th</sup> amendment to HERC 2010 RE Regulations. The relevant portion of the order dated 24.03.2015 of this Hon'ble Commission is as under:-

*“The case was called for hearing on 23.02.2015. All parties were present. The Ld. Counsel Shri R. K. Jain appearing for the Petitioner submitted that the issues raised in the present Petition are the same which are proposed to be addressed by the Commission through the draft 4th Amendment to the RE Regulations,2010. Hence, the Petitioner would not like to pursue the present Petition and the same may be allowed to be withdrawn.*

*As prayed for by the Ld. Counsel Shri Jain, the Petition is dismissed as withdrawn.”*

*A copy of the order dated 24.03.2015 in being Case No.HERC/RA-02/2014 passed by this Commission was annexed.*

***Re: Suo-motu tariff Order dated 13.08.2014 passed by this Hon'ble Commission in HERC/PRO-50 of 2014***

12. *The suo motu exercise undertaken by this Hon'ble Commission for determination of tariff for renewable energy projects (“RE Projects”) being HERC/PRO-50 of 2014. The said tariff determination was undertaken by this Hon'ble Commission, after expiry of the First Control Period, taking recourse to 3<sup>rd</sup> proviso to Regulation 4 read with Regulation 7 of the HERC 2010 RE Tariff Regulations.*

13. *It is stated that this Hon'ble Commission by its order dated 13.08.2014 determined tariff for RE Projects on ‘tentative norms’ and was ‘provisional’ in nature since:-*

- (a) First Control Period of HERC 2010 RE Regulations had expired,*
- (b) The suo-motu tariff order was passed taking recourse to inter alia 3<sup>rd</sup> proviso to Regulation 4 of HERC 2010 RE Regulations,*



(c) In terms of 3<sup>rd</sup> proviso to Regulation 4 of HERC 2010 RE Regulations, appropriate adjustments for the Intervening Period are required to be given on the basis of revised norms as and when revised regulations would be notified.

**Re: Appropriate adjustments in Tariff based on proposed revised norms for the Intervening Period**

14. The interpretation of the HERC 2010 RE Tariff Regulations that appropriate adjustment is required to be given for the Intervening Period in consonance with the unequivocal mandate of promoting renewable sources of energy contained in the Act. The relevant provisions of the Act are as under:

“61. Tariff Regulations.-

The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions or determination of tariff and in doing so, shall be guided by the following, namely:-

(a) the principles and methodologies specified by the Central Commission for determination of tariff applicable to generating companies and transmission licensees;

....

**(h) the promotion of cogeneration and generation of electricity from renewable sources of energy;**”

“86. Functions of the State Commission.-

(1) The State Commission shall discharge the following functions:

(a) ...

...

**(e) promote cogeneration and generation of electricity from renewable sources of energy** by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;” (emphasis supplied)

15. It was in view of the aforesaid it is submitted that this Hon'ble Commission correctly mentioned in the notification for draft 4<sup>th</sup> amendment to HERC 2010 RE Tariff Regulations that:-

**“6. Need for Fourth Amendment to the Principal Regulations:-**

Regulation 4 of the Principal Regulations i.e. Haryana Electricity Regulatory Commission (Terms and conditions for determination of tariff for renewable energy sources, renewable purchase obligations and renewable energy certificates) Regulations, 2010, provides that revision of the Regulations is to be undertaken six months prior to the end of the first Control Period.

**The Control Period or Review Period is defined under sub-regulation (9) of Regulation 2 of the Principal Regulations i.e. from FY 2010-11 to FY 2012-13.**

**In view of the above there is a need for initiating the revision of norms for determination of tariff for the next control period commencing from 01.04.2013.**

...

8. In view of the fact that this Commission is under **statutory obligation to encourage and promote development of renewable energy in the State as per the Electricity Act, 2003** and the policies framed by the Central Government thereto, it is required that the parameters and norms applicable for tariff determination needs to be revisited so that the potential of renewable energy generation of the State can be harnessed.

9. **Additionally, while determining RE tariff for FY 2014-15 and FY 2015-16 this Commission had observed that certain parameters / issues raised by the Intervener / objectors shall be considered while revising the RE Regulations, 2010 applicable for the second control period w.e.f. 1st April, 2013.** (emphasis supplied).

16. During the course of the hearing on 05.06.2015 in the present proceedings, a doubt was raised by this Hon'ble Commission that when the CERC 2014 RE Amendment is applicable from FY 2014-15, how can this Hon'ble Commission make the 4<sup>th</sup> amendment to HERC 2010 Regulations applicable from the FY 2013-14?. In this regard it is submitted that the CERC 2014 RE Amendment was passed within the CERC Control Period. Therefore, the question of granting appropriate adjustment based on revised norms did not arise before the Hon'ble CERC while framing CERC 2014 RE Amendment. However, this Hon'ble Commission is faced with this situation since

*4<sup>th</sup> amendment to HERC 2010 RE Tariff Regulations is being framed after expiry of First Control Period, where after 3<sup>rd</sup> proviso to Regulation 4 of HERC 2010 was applicable.*

*17. In the aforesaid background, it is most respectfully submitted that the norms that are contained in draft 4<sup>th</sup> amendment of 2010 HERC RE Regulations ought to be applied with respect to tariff determined by this Hon'ble Commission vide order dated 13.08.2014 to grant appropriate adjustments. The basis for making the said submission is as under:-*

***(a) Cost Reflectiveness of Tariff.***

*(i) Application of norms/parameters, which are mentioned in the draft 4<sup>th</sup> amendment of the HERC 2010 RE Tariff Regulations, will aid this Commission in determination of cost reflective tariff for the next control period beginning from 01.04.2013. It is most respectfully submitted that Section 61 of the Act inter alia, recognizes that the regulations to be framed by this Commission would be designed to recover the prudent cost of generation of the electricity. If tariff recoverable by a generator is determined on the basis of norms which were designed to operate till 31.03.2013 even for the periods subsequent thereto, such tariff will not be in accordance with Section 61 of the Act.*

*(ii) The reason for having norms and parameters for a particular control period is that such norms and parameters reflect prudent and reasonable costs prevalent during that control period. If the norms determined for a particular control period were made applicable even beyond that control period the very basis for determination of normative tariff will get diminished. Such tariff will then no longer remain to be a cost reflective tariff as mandated under Section 61 Act.*

***(b) Promissory Estoppel***

(i) *It is submitted that the principles of promissory estoppel will estop this Hon'ble Commission from revoking the promise/assurance contained in said 3<sup>rd</sup> proviso to Regulation 4 of the 2010 RE Tariff Regulations that appropriate adjustments will be given for the Intervening Period, based on revised regulations. It is stated that on this basis many generators like the Company invested/continued investing in their RE Projects in the State of Haryana altering their position on the basis of said promise/assurance.*

(ii) *In **Union of India and Ors. v. Indo-Afghan Agencies Ltd.** MANU/SC/0021/1967, the Hon'ble Supreme Court observed that:*

*"Under our jurisprudence the Government is not exempt from liability to carry out the representation made by it as to its future conduct and it cannot on some undefined and undisclosed ground of necessity or expediency fail to carry out the promise solemnly made by it, nor claim to be the judge of its own obligation to the citizen on an ex parte appraisal of the circumstances in which the obligation has arisen"*

*A copy of the judgment passed by the Hon'ble Supreme Court in Union of India and Ors. v. Indo-Afghan Agencies Ltd. reported as [1968] 2 SCR366 was annexe.*

(iii) *In **Motilal Padampat Sugar Mills Co. Ltd. v. State of Uttar Pradesh and Ors.**, [1979] 2 SCC 409, held that:*

*"The law may, therefore, now be taken to be settled as a result of this decision, that where the Government makes a promise knowing or intending that it would be acted on by the promisee and, in fact, the promisee, acting in reliance on it, alters his position, the Government would be held bound by the promise and the promise would be enforceable against the Government at the instance of the promisee, notwithstanding that there is no consideration for the promise and the promise is not recorded in the form of a formal contract as required by Article 299 of the Constitution.(p.442) ..... Equity will, in a given case*

where justice and fairness demand, prevent a person from insisting on strict legal rights, even where they arise, not under any contract, but on his own title deeds or under statute.(p.424) .....**Whatever be the nature of the function which the Government is discharging, the Government is subject to the rule of promissory estoppel and if the essential ingredients of this rule are satisfied, the Government can be compelled to carry out the promise made by it** " (emphasis supplied)

A copy of the judgment passed by the Hon'ble Supreme Court in *Motilal Padampat Sugar Mills Co. Ltd. v. State of Uttar Pradesh and Ors.*, reported as [1979] 2 SCC 409 was annexed.

(iv) In context of the issue at hand, it is submitted that 3<sup>rd</sup> proviso to Regulation 4 of the HERC 2010 RE Regulations unequivocally provided that appropriate adjustment shall be granted for the Intervening Period on the basis of revised norms. Therefore, if this benefit is revoked by this Hon'ble Commission effectuating the 4<sup>th</sup> amendment prospectively without giving such adjustment the same will be hit by the principles of promissory estoppel since RE generators like the Company had already altered their position based on Regulation 4 of the HERC 2010 RE Regulations, as stated above.

(v) The RE Generators who set-up their generating plants and continued investing therein, in the State of Haryana legitimately expected that the benefit of the provisions of 3<sup>rd</sup> proviso to Regulation 4 of the HERC 2010 RE Regulations would **not** be granted by this Commission.

**(c) Breach of obligation to promote renewable energy generation.**

It is most respectfully submitted that breach of aforesaid legitimate expectation and revocation of promise contained in 3<sup>rd</sup> proviso to Regulation 4 of the HERC 2010 RE Tariff Regulations will become a

*disincentive for renewable energy generation in the State of Haryana. Therefore, in case Intervening Period is excluded then the same will militate against the mandate of the Act to promote renewable energy generation.*

***(d) Regulation 4 of the 2010 RE Tariff Regulations.***

*In case draft 4<sup>th</sup> amendment to HERC 2010 RE Tariff Regulations is brought forth without giving benefit of adjustment in tariff determined by order dated 13.08.2014, the same would make 3<sup>rd</sup> proviso to Regulation 4 of the 2010 RE Tariff Regulations redundant and meaningless.*

***(e) Notification for draft 4<sup>th</sup> amendment to 2010 RE Tariff Regulations.***

*It is most respectfully submitted that in case intervening Period then the same would militate against/violate the statement of reasons and objectives for bringing forth the 4<sup>th</sup> amendment.*

18. *In view of the above, it is most respectfully submitted that the 4<sup>th</sup> amendment to 2010 RE Tariff Regulations ought to cover the complete second control period with effect from 01.04.2014 giving appropriate adjustments on the basis of revised norms.*

***Re: Directions dated 23.03.2015 of the Hon'ble Appellate Tribunal for Electricity (APTEL) Original Petition No.3/2013***

19. *On 23.03.2014, the Hon'ble APTEL has passed the following direction (s) in Original Petition No.3/2013 filed under Section 121 of the Act by Indian Biomass Power Association:-*

*"17. Accordingly, this Tribunal deems it appropriate to give following directions to the State Commission for future for determination of tariff*

*for biomass based power projects:-*

*i) The State Commission shall determine two part tariff i.e. fixed and variable charges in respect of biomass based power projects instead of a single flat energy tariff. The fixed charges may be determined for the life cycle of biomass power projects. However the variable charges may be determined periodically on the basis of prevailing biomass fuel price which may be fixed after carrying out a State specific study. The fuel price may be determined annually through an independent study. Alternatively fuel price may be determined for the first year of the Control Period of say 2 to 3 years with percentage annual escalation linked to appropriate indices for the subsequent years of the Control Period. At the end of the Control Period, the fuel price may be re-determined for the first year of the next Control Period.*

*ii) ..”*

*A copy of the judgment dated 23.03.2014 passed by the Hon'ble APTEL in Original Petition No.3/2013 was annexed.*

*20. In view of the above directions of the Hon'ble APTEL, it is submitted that this Hon'ble Commission may kindly make suitable mechanism for determination of two stage tariff for biomass generators comprising of fixed charges and variable charges.*

***Re: Submission requesting this Hon'ble Commission to permit Haryana Power Purchase Centre (HPPC) to exit from existing PPAs, if tariff is increased under the proposed regulations.***

*21. During the course of hearing on 05.06.2015 in the present proceedings a plea was raised by HPPC that in case tariff is increased on account of proposed regulations, then it should be allowed to exit from the PPA. In this regard, the following submission are made by the Company:-*

*(a) The present proceedings are concerned with proposed amendment to HERC 2010 RE Regulations. The scope of the present does not permit HPPC to raise the aforesaid issue for consideration of this Commission.*

*(b) The PPA dated 22.06.2012 ("PPA") is valid and subsisting for a period of 20 years from the date of execution thereof i.e up to 21.06.2022. A copy of the PPA dated 22.06.2012 was annexed.*

*(c) HPPC had specifically agreed that tariff payable to the Company for purchase of electricity generated shall be such as may be amended/modified by this Hon'ble Commission from time to time. (Clause 2.1.2 read with 1 (39) of the PPA). Therefore, it is not open for HPPC to exit from the PPA on account of increase in tariff because of proposed revised regulations".*

## **11. Commission's Analysis & Order**

On perusal of the comments / objections received in the Commission as well as oral pleadings of the parties in the hearings held on 23.02.2014 and 5.06.2015, the Commission observes that the interveners have mostly confined their comments/suggestions to biomass based power projects and Solar PV projects. As these are the high priority areas, given the limited wind and hydro potential in Haryana, the Commission has proceeded to examine the same in the paragraphs that follows. **However, before doing so, the Commission has examined the case laws including the maxim of promissory estoppels cited by the Ld. Advocate Shri Samir Malik appearing for M/s Starwire.**

The Ld. Advocate Shri Malik argued at length that the promissory estoppels will estop this Commission from revoking the promise/assurance contained in the 3<sup>rd</sup> proviso to Regulation 4 of the HERC RE Regulations, 2010 i.e. appropriate adjustments will be given for the intervening period based on the revised Regulations. He argued that on this basis many generators like Starwire invested/continued investing in their RE Projects in the State of Haryana altering their position on the basis of the said promise / assurance.

In support of his argument the Ld. Advocate cited two case laws as under:-

i. Union of India and Ors. V. Indo Afghan Agencies Ltd. (MANU/SC/0021/1967.



ii. Motilal Padampur Sugar Mills Co. Ltd. v. State of Uttar Pradesh and Ors. (1979) 2 SCC 409.

The Commission observed that the sum and substance of the Hon'ble Supreme Court judgements cited by the Ld. Advocate is that the Government can be compelled to carry out the promise made by it and cannot on some undefined and undisclosed ground of necessity or expediency fail to carry out the promise solemnly made by it.

The Commission has carefully perused the case laws (Supra) and observed that in the former case the Textile Commissioner made the impugned Order without informing the respondents and giving them an opportunity to explain. Hence, the Hon'ble Apex Court, while dismissing the appeal preferred by the Union of India against the judgement of the Hon'ble High Court of Punjab, held that the Textile Commissioner, before he passed the Order, did not call for their explanations and hence enquiry in a manner consonant with the rules of justice was not made.

However, the facts and circumstances of the present case before this Commission is entirely different i.e. in accordance with the HERC (Conduct of Business) Regulations, 2004 and its subsequent amendments, this Commission prepared a draft 4<sup>th</sup> amendment Regulations and sought objections/comments/suggestions from the public on the same. Hence, this Commission is duty bound to consider all objections filed by the different stakeholder which at times are contradictory. In the present case HPPC had submitted that the norms ought not be revised retrospectively as this would further increase the biomass RE Power tariff which is amongst the highest in the country and hence put additional financial burden on the Discoms and the electricity consumers of Haryana. Per contra the biomass project developer submitted that the tariff norms ought to be reviewed and accordingly tariff payable to them by the Discoms should be revised with retrospective effect as per the 3<sup>rd</sup> Proviso to regulation 4 of the HERC RE Regulations, 2010.

The Hon'ble Supreme Court judgement dated 22.11.1967 cited by the Ld. Advocate was tested on the anvil of the Indian Evidence Act – Section 115, while the statute occupying the field in the present case is The Electricity Act, 2003 which in itself is a comprehensive law governing the Power Sector

including functioning of this Commission. The preamble of the Electricity Act, 2003 is reproduced below:-

*“An Act to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity and generally for taking measures conducive to development of electricity industry, promoting competition therein, **protecting interest of consumers** (emphasis added) and supply of electricity to all areas, rationalisation of electricity tariff, ensuring transparent policies regarding subsidies, promotion of efficient and environmentally benign policies, constitution of Central Electricity Authority, Regulatory Commissions and establishment of Appellate Tribunal and for matters connected therewith or incidental thereto”.*

Thus this Commission, while exercising powers under the Act has to strike a balance between the interests of the stakeholders including the electricity consumer who has to ultimately bear the financial burden of the cost of delivered energy. Thus the present case, on facts and circumstances, is clearly distinguishable from the Hon'ble Supreme Court judgement dated 22.11.1967 cited by the Ld. Advocate. Hence, the said judgement cannot be squarely applicable in the present case before this Commission.

Further, the Commission has carefully perused the second case law cited by the Ld. Advocate i.e. Judgement rendered by the Hon'ble Supreme Court in the Civil Appeal No. 1597 of 1972 dated 12.12.1978 in the matter of M/s Motilal Padampat Sugar Mills v. State of Uttar Pradesh and Others.

The judgement rendered by the Hon'ble Supreme Court in the case supra i.e. ***“whatever be the nature of the function which the Government is discharging, the Government is subject to the rule of promissory estoppels and if the essential ingredients of this rule are satisfied, the Government can be compelled to carry out the promise made by it”*** was perused in the backdrop of the facts and circumstance of the case before the Apex Court. The said judgement was passed wherein the appellant clearly altered its position by borrowing money from various financial institutions for setting up of a Vanaspati Plant in the belief induced by the representation of the Government that sales tax exemption would be granted for a period of three years from the date of commencement of the production.

The 3<sup>rd</sup> Proviso to Regulation 4 of the HERC RE Regulations, 2010 was tested on the anvil of the ibid judgement. The relevant Regulation, at the cost of repetition, is reproduced below:-

*“Provided also that the revision in Regulations for next Control Period shall be undertaken at least six months prior to the end of the first Control Period and in case Regulations for the next Control Period are not notified until commencement of next Control Period, the tariff norms as per these Regulations shall continue to remain applicable until notification of the revised Regulations subject to adjustments as per revised Regulations”.*

The Commission observed that the *ibid* proviso provides that RE Regulations, 2010 shall continue until norms are revised and accordingly tariff is subject to adjustments. A plain reading of this proviso is sufficient to establish the fact that the assurance given therein is “revision” and “adjustment” of tariff. The revision of norms could have gone either way i.e. against the intervener i.e. M/s Starwire or in their favour thereby the adjustment in tariff could have been either negative or positive. Thus the said proviso carries no un-equivocal or absolute assurance that the revision of Regulations /Norms would be bound to be in the favour of the Power Project Developer thereby adjusting their tariff upwards as contradistinguishable from the firm assurance given by the Uttar Pradesh Government that there shall be Sales Tax exemption for three years from the commencement of production. On the basis of such an assurance i.e. HERC RE Regulations, 2010, any project developer is expected to neither alter its position nor is the lending Financial Institutions expected to extend project loan by assuming that the revision of norms in future will necessarily be on the positive side. Such a heroic assumption, if at all considered by the Project Lenders, would expose them to unwarranted risks and will be against all canons of prudent financial practice. Hence, this judgement cited by the Ld. Advocate is also not applicable in the present case before this Commission.

It would be pertinent to mention here that, by and large, the Commission has been following CERC RE Regulations as amended from time to time for fixation of norms/parameters for determination of tariff for RE project as the CERC Regulations are normally based upon exhaustive field studies. The amendment dated 18.03.2014 affected by CERC in the CERC RE Regulations, 2012 was also based on the Report of Committee constituted to undertake a detailed study on the “ Performance/Viability of Biomass based plants operating in the Country including the prevailing biomass prices” which was submitted to the CERC in July, 2013.

Now as per 3<sup>rd</sup> proviso of Regulation 4 of RE Regulations 2010, quoted by M/s Starwire, Commission was supposed to take up revision of Regulations for the next control period at least six months prior to end of the first control period i.e. Commission should have taken up revision of Regulations for the second control period between September 2012 to March 2013. It is very much apparent that even if the Commission would have taken up of revision exercise in line with the 3<sup>rd</sup> proviso of Regulation, there may not have been any significant change in the norms/ parameters as already in force as per RE Regulations 2010 as the above referred study report came much later in July 2013. Besides, CERC in the Statement of Object and Reasons enclosed with amendments dated 18.03.2014 has mentioned that “the revised norms may be prospectively applicable to the existing projects if the project developer and the distribution licensee agree to the norms through appropriate amendments to the PPA subject to the approval of respective State Commission.”

Further, the Ld. Advocate Shri Samir Malik appearing for M/S Starwire, argued that this Commission vide its Order dated 13.08.2014 had determined tariff for RE Projects on ‘tentative norms’ and was ‘provisional’ in nature. Hence, in terms of the 3<sup>rd</sup> proviso to Regulation 4 of HERC 2010 RE Regulations, appropriate adjustments for the Intervening Period are required to be given on the basis of revised norms as and when revised regulations are notified.

The Commission has considered the above argument and is of the view that prior to passing of the Order referred to by the Ld. Advocate, the Commission had fixed tentative norms for the RE Projects commissioned/to be commissioned in the FY 2014-15 and the FY 2015-16 for the purpose of inviting objections/ comments from the stakeholders. After receiving objections / comments etc. and after holding public hearing, the Commission finalised the norms and accordingly determined tariff for the RE Projects commissioned/to be commissioned in the FY 2014-15 and the FY 2015-16. Hence, the contention of the Ld. Advocate on this ground is hardly tenable and factually incorrect.

Having held as above, the Commission shall now proceed to examine the case on merit.

**Capital Cost of Solar PV Projects (Canal Top) and Biomass based Power Projects**

The Commission notes that HPGCL as well as HAREDA have proposed Rs. 1.5 to 2 Crore per MW higher Capital Cost for Canal top Solar PV projects as compared to the solar power project set up on ground. HPGCL have further submitted that the CUF for such projects may be kept about 1% to 1.5% higher than those of other Solar PV power projects.

Dr. B.S. Yadav, Director, Kamsolar Energy Consultants, during the hearing had submitted that CERC, while declaring generic tariff of Rs. 7.92/kWh for Solar PV Projects for the FY 2014-15 has considered Capital Cost of Rs. 6.90/MW and the current Capital Cost of the same is Rs.6.40 Crore/MW. Hence, he suggested levellised tariff of Rs.7.28/kWh in order to ensure that the project developers get 16% Return on Equity. Additionally, he submitted that the land requirement may be revised to 1.5 hectare per MW in line with the revised norms under Phase-II of Batch III of MNRE, Government of India. On the issue of CUF, Dr. Yadav further suggested that MNRE/GOI has fixed CUF of minimum 17% to be achieved with an upper limit of 22% and it has considered a rate of Rs.3.50/kWh to be given to the project developer for generation of power beyond the declared CUF. Hence, this Commission may also provide for the same.

In the hearing held on 23.02.2015, the representative of HPPC submitted that in the competitive bids invited by them, the levellised tariff discovered is Rs.6.50/kWh which is lower than the tariff determined by this Commission.

The Commission has considered the above submissions of HPGCL, Kamsolar Energy Consultant and HPPC and observes as under:-

i) **Capital Cost (Solar Plants)**

The Commission, while determining levellised tariff for the solar PV projects commissioned/to be commissioned in the FY 2014-15 and FY 2015-16, had considered Capital Cost of Rs. 7.05/Crore per MW (PV Poly Crystalline), Rs.6.81 Crore/MW (PV Thin Film and Rooftop). The levellised tariff(s) worked out for such projects at the discounting factor of 14.42% and CUF of 19% were Rs.7.45/kWh, Rs.7.20/kWh and Rs.7.19/kWh respectively. The project cost considered by the Commission was largely based on the prevalent market rate as well as INR/USD exchange rate as on date of the said order. The current market rate, as submitted by Dr.B.S. Yadav of Kamsolar Energy Consultant, may have come down due to

developments in the international market as well as the INR / USD exchange rate. However, the fact can also not be denied that both these factors may witness further downwards correction or even harden up. Hence, the Commission, at this stage, is not inclined to revisit the project cost as well as the levellised tariff determined for the projects commissioned/to be commissioned in the FY 2014-15 and FY 2015-16 which has attained finality. The same, however, shall be reviewed while determining levellised tariff for the FY 2016-17 onwards.

As far as the contention of HPPC is concerned, the Commission is well aware of the fact that tariff discovered through the process of competitive bidding may at times be lower. Thus, there is no embargo on the Discoms to purchase Solar Power from such bidders as long as the tariff is below the levellised tariff determined by the Commission. However, in case there is a shortfall in meeting the Solar RPO, then without the prior approval of the Commission, they should not refuse any Solar Power offered by the IPPs setting up projects in Haryana at the tariff determined by this Commission.

Regarding the Capital Cost of Canal Top Solar PV projects to be set – up in Haryana in the FY 2015-16, the Commission observes that the Generic RE Tariff determined by this Commission does not cover tariff/levellised tariff for such projects. Hence, in order to encourage such projects in Haryana, the Commission shall consider the Capital Cost of Rs. 8.0 Crore/MW and CUF of 20% and accordingly determine tariff for Canal Top Solar PV Projects to be set-up in Haryana in the FY 2015-16. The Discoms/HAREDA may also consider inviting separate reverse bids for setting up Canal Top Solar PV Projects in Haryana in consultation with the State Government authorities concerned.

### **Capital Cost (Biomass based Power Projects)**

The Commission has considered the objections raised by the Biomass developers Star Wire, Gemco Energy and Sri Jyothi as well as the arguments of the Ld. Counsel Shri R.K.Jain appearing for the Biomass Power Project developers in Haryana. The biomass power project developers in their written submissions as well as their arguments in the hearing held on 23.02.2015, have submitted that the base year considered by this Commission, in its RE Regulations, 2010 was an exceptional year in terms of inflation and other parameters affecting Capital Cost of the projects which resulted in asymmetry of the same in the subsequent years. The

Commission has considered the submissions of the biomass power project developers and observes as under:-

The HERC RE Regulations, 2010 regarding Capital Cost of the biomass power projects provides as under:-

*33. Capital Cost. –*

*(1) The normative capital cost for the biomass power projects equipped with water cooled condensers shall be Rs. 4.50 Crores / MW (FY 2010-11 during first year of Control Period) and shall be linked to indexation formula as outlined under Regulation 34.*

*(2) The normative capital cost for the biomass power projects equipped with air cooled condenser with steam turbine shall be Rs. 4.75 Crores/MW (FY 2010-11 during first year of Control Period) and shall be linked to indexation formula as outlined under Regulation 34”.*

The aforesaid dispensation was well known to all stakeholders including the project developers as well as the lending institutions. Hence, commercial viability of a project to be set up in Haryana would have been assessed / evaluated in the above backdrop. The Commission has considered the arguments of the biomass project developers' i.e. the base year considered in the Principal Regulations was an exceptional year in terms of inflation and other parameters leading to asymmetry in the projection of parameter / norms to be considered for determination of tariff wherever the same were linked to inflation indices. The Commission is of the view that the key cost driver of a project herein are the cost of steel, electrical machinery, land and civil works, erection and commissioning as well as Interest During Construction (IDC). Thus changes in the prices of all these components are reflected in the Wholesale Price Index (WPI) and the same was accounted for in the indexation mechanism provided in the regulation 34 of the HERC Regulations, 2010. The fact is that on an annualised basis the WPI changes, however, the change could be negative or positive. In case the change is on the positive side the benefit goes to the prospective project developers and in case the change is on the negative side, because of comparative low inflation, the benefit passes on to the beneficiaries of such projects. Thus such dispensation of indexing the Capital Cost, the Commission believes, balances the equity on both the sides. If we take the current scenario the WPI based inflation has been negative for about seven consecutive months and in case the trend continues the annualised WPI Inflation (if the same is

also reflected in the prices steel, electrical machinery etc.) in the FY 2015-16 will be negative thereby the project cost linked to the indexation mechanism shall decrease instead of increasing. The WPI inflation in May, 2015 was (-) 2.36% YOY as against (-) 2.65% YOY in April, 2015. However, the vice – versa shall also be true in case the WPI ends up on the positive side.

Further, this Commission while determining tariff for the biomass based RE Projects to be commissioned in the FY 2014-15 vide Order dated 13.08.2014 in the Case No. HERC/PRO-50 of 2014 (Suo Motu) did not accept the plea of the IPPs for deviating from its Regulations. The relevant paragraph of the said Order is reproduced below.

*“4.6.6 Biomass / Bagasse based power projects:*

*4.6.7 The Commission has considered the objections and suggestions of the interveners on the issue of cost of biomass / baggase as well as project cost, PLF, GCV of biomass / bagasse based generation projects and observes as under.*

*While determining generic tariff it is appropriate to adopt the normative project cost as per RE Regulations, 2010 notified by the Commission. On a case to case basis the direct as well as incidental costs may vary from project to project depending upon the location and other project specific requirements. Any extra or incidental cost arising out of action of any authority / Government Department cannot be factored in to modify the normative project cost. Hence any extra expenditure that the intervener may have incurred due to availing connectivity at a higher voltage cannot be considered as part of the project cost. Accordingly the Commission has considered the base year Capital Cost as per the RE Regulations in vogue and escalated the same by using indexation formula prescribed in the Regulations except in the case of Solar Power Projects where the Capital Cost has been determined afresh based on the market trends including INR / USD exchange rate”.*

**In view of the above discussions including the need to balance equity on both sides i.e. seller (project developers) and buyers (electricity consumers) as well as the fact that financial closure and commissioning of the project has already happened on the basis of the existing normative**



**Capital Cost, the Commission finds no merit in the contention of M/s Starwire that the project cost for the biomass power projects commissioned in the FY 2013-14 needs to be revised with retrospective effect.**

The Commission has also taken note of the CERC notification no L-1/94/CERC/2011 dated 18.03.2014 wherein CERC has amended the Capital Cost of Biomass Projects. However the same, due to the reasons explained above, cannot form the basis for revising the Capital Cost norms for the projects already commissioned and are under commercial operation since long. However for projects where financial closure is yet to be achieved, the revised capital cost as per CERC amendment dated 18.03.2014 would apply. The amendment in RE Regulations, 2010 is being made accordingly

**ii) Auxiliary Energy Consumption / De - rating (Solar PV Projects)**

The Commission has considered the objection of HPGCL that no provision has been kept for the Auxiliary Energy Consumption & Transmission Losses in the draft regulation for solar power projects and for making provision for derating of the Solar PV panels which ought to be in the range of 0.5% to 1%. After due deliberations, the Commission is of the considered view that there may be a very small auxiliary energy consumption in Solar PV Plants as well as some deterioration in the efficiency of solar panels over the life of the project. However, due to lack of empirical data submitted by the objector i.e. HPGCL and the fact that Solar Module supplier are guaranteeing 21 to 25 years of solar panel rated efficiency which also include replacements of solar modules, it may not be appropriate, at this stage, to factor in auxiliary energy consumption and derating of the Solar Panels in the levellised tariff. **HAREDA may take up these issues and submit their recommendations for the consideration of the Commission in future.**

**iii) Auxiliary Consumption (Biomass Project):-**

The Commission has decided to align the norm for auxiliary energy consumption for Biomass based projects with the CERC RE Regulations as proposed in the draft amendments. However, the revised norms shall be applicable to the new projects, which are yet to be commissioned.

#### **iv) Station Heat Rate & Gross Calorific Value (Biomass Power Projects)**

The Commission has dealt with this issue at length while determining RE Tariff for the Biomass Power Projects commissioned / to be commissioned in Haryana in the FY 2014-15 and the FY 2015-16 and the same were aligned with the CERC Regulations. Consequently, the RE Regulations, 2010 are accordingly being revised.

The revised norm for SHR and GCV shall be applicable for the projects commissioned/to be commissioned in the FY 2014-15 onwards. For the projects commissioned in the FY 2013-14, the revised norms for SHR and GCV shall be applicable prospectively from the date of notification of these Regulations and for the period prior to notification of these Regulations the SHR and GCV shall be as per Principal Regulations. The Commission further observes that the CERC has revised the SHR to 4200 kCal/kWh while at the same time not allowing use of fossil fuel. Since the RE Regulation, 2010 provide for the use of fossil fuel to the extent of 15% necessary provision is being made in the Regulation that the Generator/ Distribution Licensee shall approach the Commission for appropriate reduction in the SHR, in case the Biomass based projects use fossil fuel as provided under Regulation 40 of the Principal Regulations.

#### **v) O&M Expenses (Biomass Power Projects):-**

The O&M expenses, as per the draft amendment, were pegged at Rs. 40 Lakh/MW for the first year of the control period i.e. FY 2013-14. The same was to be escalated at the rate of latest available Wholesale Price Index (60% weightage) and Consumer Price Index (40% weightage). All the biomass based project developers, who have actually commissioned such power plants in Haryana, based on the data emanating from their respective biomass based power plants, submitted that the actual O&M expenses are much higher i.e. in the range of 44 Lakhs to 49 Lakhs / MW. They further argued that the labour and related components account for a substantial part of the O&M expenses. Hence, the escalation should be linked to CPI i.e. 11% per annum. The Commission has considered the submissions and is of the view that CERC, after exhaustive study, had pegged O&M expenses at Rs.40 Lakh/MW and the same was proposed by this Commission in the draft amendment as well. The Commission has accordingly

decided to revise the norms for O&M expenses for biomass based RE Projects for the next Control Period to Rs. 40 lakh/MW (base year FY 2013-14) with indexation as provided in the Principal Regulations. Further, the Commission observes that the CERC has revised the norms applicable for the projects to be commissioned in the FY 2014-15 onwards. Regarding existing projects, CERC in the Statement of Reasons (SOR) mentioned that “the revised norms may be prospectively applicable to the existing projects if the project developer and the distribution licensee agree to the norms through appropriate amendments to the PPA subject to the approval of respective State Commission.” However, considering that the O&M expenses as per RE Regulations, 2010 worked out as Rs. 23.93 Lacs per MW( for FY 2013-14) , are significantly lower than the CERC norm of Rs. 40 Lacs per MW(Base year 2013-14), the Commission is inclined to allow O&M expenses as per CERC norm for the project commissioned in 2013-14 onwards but prospectively from the date of notification of these revised Regulations.

Thus it would be appropriate for the biomass project developers to bring in operational efficiencies in order to rein in O&M expenses so as to bring the same in line with the norms as considered by CERC and also approved by this Commission in this order. However, the Commission finds some merit in the arguments of the biomass power producers in Haryana that fuel procurement, fuel handling etc. is labour intensive and given a wide range of fuel used in the plants the escalation ought to be linked more with CPI than with WPI. Consequently, **for the purpose of O&M escalation, the weight assigned to the percentage change in WPI shall be 55% and 45% to the percentage change in the CPI of the relevant year.**

**vi) Wheeling Charges**

The Ld. Counsel Shri R. K. Jain appearing for M/S Star Wire cited the order of the Hon’ble APTEL in appeal no 90 of 2013 dated 09.04.2014 in the case of M/s Puri Oil Mills Lts Vs Haryana Power Purchase Centre & Others.

The relevant part of the judgement, relied upon by the Ld. Counsel, is reproduced below:-

*“39. However, we find merit in the case of the Appellant in the fourth issue regarding levy of wheeling charges on the energy supplied to the Respondent no. 1 for use by the distribution licensee. The Appellant is supplying the entire energy*

*generated at its power plants for use by the distribution licensee and is not wheeling any power for captive use or for sale to third party.*

*40. 'Wheeling' is defined under Section 2 (76) of the Electricity Act, 2003 as under:*

*(76) "wheeling" means the operation whereby the distribution system and associated facilities of a transmission licensee or distribution licensee, as the case may be, are used by another person for the conveyance of electricity on payment of charges to be determined under section 62; Here the distribution system facilities are being utilized by the distribution licensee for taking power from the Appellant's Power Plant for supply to its consumers and, therefore, there is no reason for the Respondents to levy wheeling charges on the Appellant, the generator.*

*41. We find that the State Commission has determined the tariff based on the operational and financial norms decided the tariff order dated 15.5.2007. According to the tariff order the State Transmission utility/distribution licensee has to provide connectivity to the renewable energy generator and the generator has to bear the cost of transmission line beyond 10 km. if the distance of transmission line from the power plant to the licensee's sub-station is more than 10 km. In the tariff order the State Commission also decided the wheeling charges and banking which are applicable for wheeling of power for captive use or third party sale. The banking and wheeling charges are not applicable where the generator is supplying the entire power at its bus bars to the distribution licensee for which the State Commission has determined the ex-bus tariff.*

*42. We also find that according to the PPA dated 13.8.2010, the delivery point of the power is the switchyard of the power plant of the Appellant. The tariff is also defined as the rate approved by the State Commission for every kWh of net delivered energy at the delivery point. The metering point is also the Inter Connection Point which the point where the switchyard of the Power Plant joins with the power evacuation line of the distribution licensee. The PPA has a provision (Article 11) for Wheeling and Banking, if at a later stage there is mutual agreement the parties agree for third party sale by the Appellant subject to the approval of the State Commission and in such case the Appellant and the third party shall enter into a Wheeling & Banking agreement. We feel that the Wheeling charges will be*

*payable by the Appellant only when it supplies power to a third party which is not the case at present.*

*43. Thus, we hold that wheeling charges are not leviable on the Appellant for the energy supplied to the Respondent no. 1 for utilization by the distribution licensee. Accordingly, the distribution licensee will refund amount wrongly deducted as wheeling charges to the Appellant within 45 days of communication of this order. In case of delay in making payment beyond 45 days simple interest @ 12% per annum will be payable to the Appellant”.*

The Ld. Counsel for M/s Star Wire further submitted that the distribution licensee is already recovering the cost of the transmission line built by them by way of depreciation through ARR and tariff. Thus, the wheeling charge being recovered by them is resulting in the distribution licensee earning un-justified profits as reimbursement of the same cost twice if wheeling charges are deducted and depreciation is also claimed.

The Commission has considered the submissions of the Ld. Counsel of M/s Star Wire and observes that as on date the wheeling charges are recoverable from a renewable energy developer, in the terms of Regulation 73 (2) of RE Regulations 1st Amendment, 2011 dated 05.09.2011, at a reduced rate of 2% if the entire energy fed into the grid is sold to the distribution licensee and when the energy is sold to a third party, the developer is liable to pay full wheeling and transmission charges as determined by the Commission from time to time. The Commission further observes that the basis behind this provision was that cost of evacuation line for the developer up to 10 km is borne by the distribution licensee and thus recovery of wheeling charges from the Developer to compensate the licensee for the cost incurred, it was felt, was justified. Further in the said provision, the Commission had clearly distinguished the sale of energy by Developer to the licensee viz a viz the sale to the third party. Whereas in the former case developer is liable to pay nominal wheeling charges, full transmission and wheeling charges are payable in later case i.e. third party sale. The Commission had thus stipulated recovery of 2% wheeling charges form the Developer in case of sale of entire power to the distribution licensee. However, considering the submissions of the stake-holders made citing the APTEL order dated 09.04.2014 and with a view to further incentivize the generation of

renewable power in the state, **the Commission has decided that from the date of notification of revised Regulations, Renewable Energy producers in Haryana would not be required to pay any wheeling charges if the entire energy injected into the grid is purchased by the distribution licensee.** However, in case of third party sale, wheeling charges as determined by the Commission from time to time will be leviable. The RE Regulations is being amended accordingly.

**vii) Incentive / Rebate on payment of bills**

The Ld. Counsel Shri R. K. Jain raised the issue of difference in the terms and conditions of billing and payments applicable to various RE Project developers in Haryana. While admitting this, the representative of HPPC submitted that the Power Purchase Agreements (PPA) were signed with the IPPs at different points of time and hence the difference.

The Commission has considered the above submissions and also notes that the regulation 18 and 19 of RE Regulations, 2010 provides for rebate and late payment surcharge for payment of bills by the HPPC/Discoms. However, the PPAs signed prior to the ibid Regulations may have different dispensation. Commission is of the opinion that it cannot force any amendments in the already concluded PPAs but the developers and the distribution licensees/HPPC can mutually agree for appropriate amendments in the PPAs, concluded prior to RE Regulations, 2010, to make Incentive/Rebate and Late Payment Penalty clauses in line with RE Regulations, 2010. So no amendment in Rebate and Penalty clause is required.

**viii) Loss of Efficiency / PLF (Biomass based projects)**

The Commission has considered the submissions of the parties and is of the view that the SHR of 4200 kcal/kWh considered by the Commission, based on the detailed study by CERC, already include sufficient margin over design Heat Rate to take into account the ageing and degradation with time. Hence, the Commission is of the considered view that there may not be any need to provide separate margin for the loss of efficiency. Further, biomass projects are capable of achieving a PLF, on a sustained basis from second year onwards, of 80%. Hence, considering the stabilization period of six months as provided in the

HERC RE Regulations, 2010 and relaxed PLF in the first year of operation, **the Commission finds no merit in the contention of the parties and rejects the same.**

ix) **Fuel Cost & escalation thereto**

**Regulation 43 of the RE Regulations, 2010 provides that the fuel price during the first year of the first control period shall be Rs.1906/MT and the same shall be either indexed as per regulation 44 of the said Principal Regulations or alternatively escalated @ 5% per annum for each subsequent year. As the Commission has already determined fuel cost for biomass projects to be Commissioned in Haryana in the FY 2014-15 and the FY 2015-16 @ 3055/MT the same shall continue to be applicable with escalation of 5% beyond the FY 2015-16.** The revised fuel cost with escalation shall also be applicable prospectively to the projects commissioned in the FY 2013-14 i.e. from the date of notification of these revised Regulations. Further, in line with APTEL order dated 23.03.2015 in Original Petition No. 03/2013, at the end of the Control Period, the fuel price shall be re-determined for the first year of the next Control Period and the same shall also be applicable for the subsequent years for the projects commissioned in the previous Control Periods.

**Fuel handling & Storage**

The biomass power project developers, in the hearing held on 23.02.2015, had vehemently argued that that they have to bear additional cost for handling and storing of fuel over and above the cost of fuel. Additionally, they argued that biomass fuel has seasonal availability. Since it is low-density fuel and is degradable, precaution has to be taken while handling and storing the same. Also the developers have to shift the same from storage within/near the plant to the feeding point. They cited the Order of Hon'ble Rajasthan Electricity Regulatory Commission wherein 2% has been allowed towards fuel handling and storage. They also put forth the fact that this Commission considers separate cost for transportation and handling of fossil fuel while determining tariff for the thermal power plants in Haryana. Hence, the same may also be allowed to them.

**The Commission has considered the submissions of various stakeholders and is of the view that higher O&M cost of Rs. 40 Lacs/MW**

**considered by the Commission takes into account the higher fuel handling and storage cost as well. The same is also in line with the CERC Regulations. As such, no separate cost is required to be provided for fuel handling and storage.**

x) **Working Capital Computation in respect of biomass/non-fossil fuel base cogeneration projects**

In view of the fact that no amendment is being affected in the billing and rebate/penalty clause, no amendment is required to be made in the method of computing working capital. However, the amendment in the applicable rate of interest on working capital is being made in line with the draft amendment.

xi) **MAT on ROE / Sharing of CDM** shall be as proposed in the draft 4<sup>th</sup> Amendment.

xii) **Control Period**

The Commission had proposed to extend the control period up to the FY 2017-18. In the hearing held on 5.06.2015 the representative of HAREDA and Starwire had no objection to extending the control period as proposed by the Commission. However, HPPC, in the hearing held on 5.06.2015 as well as vide their written submissions dated 25.06.2015, view of the fact that project cost of Solar PV projects are continuously declining thereby the tariff for such power ought to decline as well, did not agree to extend the Control Period. HPPC, in their written submissions also raised the issue of the RE Regulations being restricted to certain forms of generation of electricity. Hence, they requested that other modes of generation of electricity and tariff thereto may also be determined.

The Commission has considered the above submissions of the stakeholders and is of the view that FY 2014-15 and almost 1<sup>st</sup> half of the FY 2015-16 are already over. The Commission, vide its Order dated 13.08.2014, has already determined generic tariff for renewable energy projects to be commissioned up to the FY 2015-16. As far as Solar tariff is concerned, the tariff determined by the Commission for the FY 2014-15 and 2015-16 is the ceiling tariff, in case the tariff discovered through competitive bidding / reverse bidding is on the lower side there is no estoppels for HPPC to contract such power for fulfilling its renewable purchase obligation. **Thus in order to provide some**



**regulatory certainty and continuity for the prospective RE Project Developers in Haryana, the Commission decides to extend the Control Period up to the FY 2016-17 instead of the proposed FY 2017-18.** As far as the contention of HPPC is concerned i.e. to include 'other modes of generation' while determining generic tariff, the Commission is of the view that besides the technologies already mentioned in the HERC RE Regulations, any other technologies including biogas, municipal waste, poultry litter / cow-dung, small hydel projects etc. are covered under the clause wherein tariff is determined on a case to case basis.

In view of the revised norms as approved above, the Commission approves the 4th Amendment to HERC RE Regulations, 2010 as placed at Annexure 'A'. All other parameters / norms not specifically dealt herein shall continue to be applicable as provided in the HERC RE Regulations, 2010 and its subsequent amendments.

This order is signed, dated and issued by the Haryana Electricity Regulatory Commission on 04<sup>th</sup> August, 2015.

Date: 04.08.2015.

Place: Panchkula.

**(M.S. Puri)**

**Member**

**(Jagjeet Singh)**

**Chairman**

**Notification**

**The 12<sup>th</sup> August, 2015**

Haryana Electricity Regulatory Commission (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulation, 2010 (4<sup>th</sup> Amendment) Regulations, 2015.

**Regulation No. HERC/ 23 / 2010 / 4<sup>th</sup> Amendment / 2015.-**

In exercise of the powers conferred on it by section 61 read with section 181 of the Electricity Act, 2003 (36 of 2003) and all other powers enabling it in this behalf, and after previous publication, the Haryana Electricity Regulatory Commission hereby makes the following regulations to amend the Haryana Electricity Regulatory Commission (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2010 (hereinafter referred to as “the Principal Regulations”), namely:

**CHAPTER - 1**

**GENERAL**

**1. Short Title and Commencement. -**

(1) These Regulations shall be called the Haryana Electricity Regulatory Commission (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) (4<sup>th</sup> Amendment) Regulations, 2015.

(2) These Regulations shall extend to all the RE Projects commissioned / to be commissioned in FY 2013-14, 2014-15, 2015-16 and 2016-17 in the State of Haryana.

(3) For the existing projects commissioned during FY 2013-14 onwards, the revised norms shall be applicable prospectively from the date of notification of these Regulations unless provided otherwise in these Regulations. For the period prior to the date of notification, existing norms as per Principal Regulations shall be applicable for such projects.

(4) These regulations shall come into force from the date of their notification in the Official Gazette.

**Chapter 2**

**Norms**

**2. Amendment of Regulation 4 of the Principal Regulations: -** The existing Regulation 4 of the Principal Regulations shall be substituted as under:-

**“4. Control Period or Review Period -** The second Control Period or Review Period under these Regulations shall be of four years, of which the first year shall be the FY 2013-14.

Provided that the benchmark capital cost for Solar PV and Solar thermal power projects shall be reviewed annually by the Commission.

Provided further that the tariff determined as per these Regulations for the RE projects commissioned during the Control Period, shall continue to be applicable for the entire duration of the Tariff Period as specified in Regulation 5 of the Principal Regulations.

Provided also that the revision in Regulations for next Control Period shall be undertaken at least six months prior to the end of the this second Control Period and in case the Regulations for the next Control Period are not notified, until commencement of next Control Period, the tariff norms as per these Regulations shall continue to remain applicable until notification of the revised Regulations, and the second control period shall be deemed to have been extended up to the date of notification of Regulations for the next control period.”

**3. Amendment of Regulation 5 (2) of the Principal Regulations:-**

The Regulation 5 (2) of the Principal Regulations shall be replaced by the following regulation:-

“5 (2) The tariff determined by the Commission under these Regulations is for Renewable Energy Power Plants with entirely new plant and machinery. The first year tariff shall be applicable from the COD of the Project and shall continue for 12 months from the COD and thereafter tariff for the second year shall be applicable on year to year basis i.e. for first 12 months from COD, first year tariff shall be applicable, then for next twelve months second year tariff shall be applicable and so on.”

**4. Amendment of Regulation 6 of the Principal Regulations:-**

The following shall be added as sub – para (i) after sub-para (h) of Regulation 6(1)

“(i) Hydel Power Projects below 25 MW.”

**5. Amendment of Regulation 8 of the Principal Regulations:-**

The proviso to Regulation 8 of the Principal Regulations shall be substituted with the following:-

“Provided that for renewable energy technologies having fuel cost component, like biomass power projects and non-fossil fuel based cogeneration, single part tariff with two components, fixed cost component and fuel cost component, shall be determined. The fuel cost component may be subjected to escalation/ revision as provided in Regulation 43.”

### **Chapter 3**

#### **Financial Principles**

**6. Amendment of Regulation 15 of the Principal Regulations:**

The following shall replace regulation 15(b) of the Principal Regulations:-

“(b) Applicable MAT/Corporate Tax shall be separately invoiced as per the applicable tax rate as declared by the Income Tax Department. The Generator shall raise the bill for reimbursement of MAT/Corporate Tax applicable on Return on Equity in 12 equal installments which shall be payable by HPPC.”

**7. Amendment of Regulation 16 (3) of the Principal Regulations:**

The Regulations 16(3) shall be replaced by the following Regulations:-

“16(3) Interest on Working Capital for any financial year shall be computed at the average of the base rate of SBI prevailing during the first six months of the previous year plus 300 basis points.”

**8. Amendment of Regulation of the Principal Regulations:**

The Regulation 20(1) of the Principal Regulations shall be substituted by the following:-

“(1) The proceeds of carbon credit from approved CDM project, after deduction of expenses incurred by the generating company for registration and approval of the project as CDM project, shall be shared between generating company and concerned beneficiaries in the following manner, namely:”

### **Chapter 4**

**9. Amendment of Regulation 23(2) of the Principal Regulations:**

The Regulation 23(2) of the Principal Regulations shall be substituted by the following Regulation:-

“The capital cost for wind energy projects shall be Rs. 60.40 million per MW with base year FY 2013-14 and shall be linked to the indexation formula i.e. changes in the Whole Sale Price Index (WPI) for Steel and Electrical Machinery as reported by the Government of India, as outlined under Regulation 24.”

### **Chapter 6**

**10. Amendment of Regulation 33 of the Principal Regulations:**

The Regulation 33 of the Principal Regulations shall be substituted by the following Regulation:-

**“33. Capital Cost.** – (1) The normative capital cost for the biomass power projects equipped with water cooled condensers shall be Rs. 540 lakh/MW (FY 2013-14 base year) and shall be linked to indexation formula as outlined under Regulation 34.

(2) The normative capital cost for the biomass power projects equipped with air cooled condenser with steam turbine shall be Rs. 580 lakh/MW (FY 2013-14 base year) and shall be linked to indexation formula as outlined under Regulation 34.

Provided that the revised capital cost (as mentioned at (1) & (2) above) shall not be applicable for the projects already commissioned or where financial closure has been attained on or before the date of notification of these Regulations.”

**11. Amendment of Regulation 36 of the Principal Regulations:**

The Regulation 36 of the Principal Regulations shall be substituted by the following Regulation:-

**“36. Auxiliary Consumption:** –The auxiliary consumption for determination of tariff shall be taken as under: -

1. For the projects using water cooled condenser:-
  - a) During first year of operation : 11%
  - b) From 2<sup>nd</sup> Year onwards : 10%
2. For the projects using air cooled condenser:-
  - a) During first year of operation : 13%
  - b) From 2<sup>nd</sup> Year onwards : 12%”

**12. Amendment of Regulation 37 of the Principal Regulations :-**

The Regulation 37 of the Principal Regulations shall be substituted by the following Regulation:-

**“37. Station Heat Rate** - The Station Heat Rate (SHR) for biomass power projects with travelling-grate boiler shall be 4200 kCal/kWh and for project with AFBC boilers, it shall be 4063 kCal/kWh. The revised SHR norms shall be applicable for the projects commissioned / to be commissioned in the FY 2014-15 onwards.

Provided that for the projects commissioned in the FY 2013-14 the revised SHR shall be applicable prospectively from the date of notification of these Regulations. For the period prior to date of notification of these Regulations, SHR shall be as per Principal Regulations.

Provided that the Generator/Distribution Licensee shall approach the Commission for appropriate reduction in the SHR, in case the Biomass based project uses fossil fuel as provided under Regulation 40 of the Principal Regulations.”

**13. Amendment of Regulation 38 of the Principal Regulations :-**

The Regulation 38 of the Principal Regulations shall be substituted by the following Regulation:-

**“38. Operation and Maintenance Expenses –**

(1) Normative O&M expenses shall be Rs. 40.00 Lakh per MW (FY 2013-14 base year).

(2) Normative O&M expenses allowed under these Regulations shall be escalated at the rate of latest available Whole Sale Price Index (WPI) and Consumer Price Index (CPI) as may be published by the Government of India. The weight assigned to the percentage change in the WPI shall be 55% and 45% to the percentage change in CPI of the relevant year.

Provided the O&M expenses as per revised norms as above shall be revised prospectively for the plants already commissioned in 2013-14, 2014-15 and 2015-16 from the date of notification of revised Regulations.”

**14. Amendment of Regulation 42 of the Principal Regulations:-**

The Regulation 42 of the Principal Regulations shall be substituted by the following Regulation:-

**“42. Calorific Value -** The Calorific Value of the biomass fuel used for the purpose of determination of tariff shall be 3100 kCal/kg for the projects commissioned in FY 2014-15 onwards. For the projects commissioned in FY 2013-14, the revised norms shall be applicable prospectively from the date of notification of revised Regulations.”

**15. Amendment of Regulation 43 of the Principal Regulations:-**

The Regulation 43 of the Principal Regulations shall be substituted by the following Regulation:-

**“43. Fuel Cost –** (1) Biomass fuel price during the control period shall be Rs. 3055 / MT (Base Year FY 2014-15) subject to an escalation of 5% per annum for the projects commissioned/to be commissioned in the FY 2014-15 onwards.

Provided that the revised fuel price shall be applicable to the projects commissioned in FY 2013-14 prospectively from the date of notification of these Regulations.

Provided further that the fuel cost re-determined by the Commission for the first year of next control period shall also be applicable prospectively to the projects commissioned during current control period.

The fuel price Indexation Mechanism given in Regulation 44 shall not apply for Biomass based projects. ”

## Chapter 8

### **16. Amendment of Regulation 55 of the Principal Regulations : -**

The Regulation 55 of the Principal Regulations shall be substituted by the following Regulation:-

**“55. Technology Aspects** – Norms for Solar Photovoltaic (PV) power under these Regulations shall be applicable for grid connected PV systems that directly convert solar energy into electricity and are based on the technologies such as crystalline silicon or thin film etc. as may be approved by MNRE. The PV modules shall conform to the latest edition of IEC/equivalent BIS standard with respect to design, testing and requirements for construction & testing for safety qualification.”

### **17. Amendment of Regulation 56 of the Principal Regulations: -**

The Regulation 56 of the Principal Regulations shall be substituted by the following Regulation:-

**“56. Capital Cost** – The normative capital cost for setting up Solar Photovoltaic Power Project shall be Rs. 7.05 crore/MW (PV Poly Crystalline), Rs. 6.81 crore/MW (PV Thin film and Rooftop) and Rs. 8.00 crore/MW (Canal top Solar PV) for FY 2014-15. However for the project commissioned before FY 2014-15, the capital cost shall not be revised.

Provided that the Commission may deviate from above norm in case of project specific tariff determination in pursuance of regulation 6 and regulation 7.”

### **18. Amendment of Regulation 57 of the Principal Regulations: -**

The Regulation 57 of the Principal Regulations shall be substituted by the following Regulation:-

**“57. Capacity Utilization Factor** – The Capacity utilisation factor shall be 19% for Solar PV projects and 20% for Canal top Solar PV projects.

Provided that the Commission may deviate from above norm in case of project specific tariff determination in pursuance of regulation 6 and regulation 7.”

## Chapter 9

### **19. Amendment of Regulation 59 of the Principal Regulations : -**

The Regulation 59 of the Principal Regulations shall be substituted by the following Regulation:-

**“59. Technology Aspects** – Norms for Solar thermal power under these regulations shall be applicable for Concentrated Solar Power (CSP) technologies viz. line focusing or point

focusing, as may be approved by MNRE, and uses direct sunlight, concentrating it several times to reach higher energy densities and thus higher temperatures whereby the heat generated is used to operate a conventional power cycle to generate electricity. The Solar thermal power plant shall conform to the latest edition of IEC/equivalent BIS standard with respect to its technology, safety, testing and construction.”

**20. Amendment of Regulation 60 of the Principal Regulations: -**

The Regulation 60 of the Principal Regulations shall be substituted by the following Regulation:-

**“60. Capital Cost** – The normative capital cost for setting up Solar Thermal Power Project shall be Rs. 12.00 crore/MW for FY 2013-14.

Provided that the Commission may deviate from above norm in case of project specific tariff determination in pursuance of regulation 6 and regulation 7.”

**Chapter 11**

**21. Amendment of Regulation 73(2) of the of the Principal Regulations:-**

The Regulation 73(2) of the Principal Regulations shall be substituted by the following Regulation:-

**“(2)** The Wheeling Charges shall not be leviable on the Renewable Energy Generators from the date of notification of these Regulations, if the entire energy injected into the grid is purchased by the distribution licensee.

Provided the delivery point of power is the switchyard of the power plant of the IPP and the metering point is also the inter-connection point i.e. the point where the switchyard of the power plant connects with the power evacuation line of the licensee(s).

Provided further that wheeling charge and transmission charge at the rate determined by the Commission from time to time shall be levied in case the power is supplied to a third party i.e. other than the distribution licensee(s) in Haryana.”

**(M.S. Puri)**  
**Member**

**(Jagjeet Singh)**  
**Chairman**